UNIVERSITY OF MIAMI

THE ART OF PLAYING TRUMPET IN THE UPPER REGISTER

By

August William Haas

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One of the most desired assets for a trumpeter is the ability to play in the upper register, also known as the extreme register. Upper-register playing is required in most genres of music, and it is considered one of the most difficult mental and physical challenges of trumpet performance. This paper aims to critically analyze and discuss upper-register playing, thereby serving as a guide enabling trumpet players to more effortlessly master this task.

To achieve this, there will be a comprehensive analysis of the Baroque approach to the upper register, which will then be compared to the modern approach. The assessment will differentiate among embouchures used, jaw and facial structures (i.e. overbite or under bite, straight teeth, or gaps in teeth), diet, breathing techniques, tongue placement, and equipment or combinations thereof (i.e., different mouthpiece and trumpet combinations). Additionally, a study of past and present professional upper-register masters, as well as myths of upper-register playing, will be presented. This paper is intended to serve as a methodology to upper-register trumpet playing and will offer trumpet performers simple, yet proven, practical methods which can improve proficiency in this critical arena.

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CHAPTER ONE

INTRODUCTION

One of the most desired assets for a trumpeter is the ability to play in the upper register, also known as the extreme register. Upper-register playing is required in most genres of music, and it is considered one of the most difficult mental and physical challenges of trumpet performance. This paper aims to critically analyze and discuss upper-register playing, thereby serving as a guide enabling trumpet players to more effortlessly master this task.

To achieve this, there will be a comprehensive analysis of the Baroque approach to the upper register, which will then be compared to the modern approach. The assessment will differentiate among embouchures used, jaw and facial structures (i.e. overbite or under bite, straight teeth, or gaps in teeth), diet, breathing techniques, tongue placement, and equipment or combinations thereof (i.e. different mouthpiece and trumpet combinations). Additionally, a study of past and present professional upper-register masters, as well as myths of upper-register playing, will be presented. This paper is intended to serve as a methodology to upper-register trumpet playing and will offer trumpet performers simple, yet proven, practical methods which can improve proficiency in this critical arena.

Background

In order to fully convey the scope of playing in the upper register, it is important to first portray how the trumpet was invented, and to then articulate the role of the trumpet in the past and the present. The trumpet is one of the oldest known wind instruments, and it can be deduced that it was already known in the time of Moses.[1] While there is no concrete evidence revealing the true inventor of the trumpet, Altenburg traced its historical links to a few different cultures. There are various opinions amongst scholars regarding the trumpet's creator. The historically credible classes are Egyptians and Etruscans.[2] Back in the time of the trumpet's inception, it served two separate but important functions. First, there was a technique called "blowing," which was a constant, unbroken sound that gathered people to assembly.[3] Second was the procedure called "sounding the alarm," which evoked a broken sound, interchanging various tones while signaling the breaking of camp. Over time, there was a shift in the role of the trumpet, evolving from its functional jobs, such as "blowing" or "sounding the alarm," into its position as a solo instrument. During the Baroque era, the metamorphosis was obvious, and the skill of playing in the extreme register became prominent. There was no documented upper-register playing prior to the Baroque era.

The first type of extreme-register playing was performed on natural trumpet, a trumpet without valves or pistons, slides, or other aids. The natural trumpet, vastly

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[1] Johann Ernst Altenburg, *Trumpeters' and Kettledrummers' Art* (The Brass Press, 1974), 5.

[2] Ibid., 3.

[3] Ibid., 17.

different from the modern trumpet, can only play the notes in its harmonic series.[4] In the early days of natural trumpet, the terms used to designate playing in the upper register were *clarion, claro,* or *clarasius*, Latin words that denote clear tone.[5] The French translated this as *clarion,* and the Italians used the word *clarion*.[6] The terms *clarin* or *clarin part* have roughly the same meaning as the soprano or discant part, where a melody is played in the upper register high and clear.[7] The same language is still employed today with regard to Baroque music.

According to historian and theorist Johann Altenburg, fundamental prerequisites were required for clarion players that are similar for modern-day performers. Over time, the natural trumpet evolved into what players utilize today. Unlike a natural trumpet, a modern trumpet can play all the notes in the seven harmonic series. The most common trumpet played today is pitched in Bb, which is one whole step lower than the concert pitched C. The practical range of a Bb trumpet (in concert pitch) is E3 to Bb5, as seen on a piano. Anything above Bb5 is considered to be the upper and extreme register of the trumpet. The Bb trumpet, which is common in today's orchestras and bands, has a tube length of 130 cm. and three piston valves. It consists of a tapered mouth pipe 18 to 33 cm. long into which the mouthpiece is inserted, a middle section of cylindrical tubing, including the tuning-slide and the valves together with their associated tubing, and a

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[4] Oxford Music Online, s.v. "natural trumpet," http://www.oxfordmusiconline.com/subscriber/article/opr/t114/e4682 [Accessed August 12, 2010]

[5] Johann Ernst Altenburg, *Trumpeters' and Kettledrummers' Art* (The Brass Press, 1974), 94.

[6] Ibid.

[7] Ibid.

conical bell section ending in a flare about 12.5 cm. in diameter. The cylindrical part of the bore is between 11.66 mm. and 11.89 mm. in diameter. Although the bore was traditionally about one-third conical and two-thirds cylindrical, modern manufacturers of piston-valve trumpets have increased the length of the conical section to improve intonation. In some modern trumpets, the cylindrical tubing constitutes only about 20 percent of the total length.[8]

Playing in the upper or extreme register of the trumpet used to be considered a specialty. Because fewer trumpet players could do it, this particular aptitude was not a requirement. Over time, however, the demands on trumpeters have evolved, and the function of the specialist has diminished. Today, the trumpet player's capabilities must be much more extensive. Stan Kenton's big band from the 1950's, for example, housed five trumpets. The lead player would play in the upper register, but his part would cap off at a certain note. There were two jazz soloists, a split lead player, and a final "utility player" who would explore the absolute extremes of the trumpet. Trumpet performer Maynard Ferguson was Stan Kenton's "utility player" who set new standards for the range of the trumpet. Modern big bands generally have four trumpets as opposed to five trumpets. The contemporary lead player must now execute the high notes, the extreme notes, and, in some cases, improvisation.

However, it is important to look at all aspects of music and not exclusively jazz. In classical music, there is a principal and assistant principal player of each section. The comparable jazz term is the "lead" and "split lead" player. In both genres, players of

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[8] Oxford Music Online, s.v. "trumpet," http://www.oxfordmusiconline.com/subscriber/article/grove/music/49912 [Accessed on August 12, 2010]

each section are to follow the phrasing, articulations, and releases of the principal or lead player. The principal or lead players are generally expected to have a strong and consistent upper register as part of the duties of that chair. The assistant principal and split lead player only step in if the principal or lead players need rest. Since the number of specialists has diminished, trumpet players are expected to possess a moderate knowledge of every facet of trumpet playing. A current example of this facility is Yanni's trumpet player, Jason Carder. Carder has to improvise, play in extreme registers, and execute aspects of classical music in every Yanni performance. Today, for a trumpet player, versatility is key to surviving in the music business. A hirable player needs to be proficient in the upper register, improvisation, and playing in multiple genres.

Justification for Study

In the last ten years, approximately 340 theses or dissertations have been written on the trumpet.[9] Of this compilation, none has been solely dedicated to upper or extreme registers of the trumpet. The number of studies done on playing in the upper or extreme registers pales greatly in comparison to inquiries related to other trumpet-based research.[10] As shown in the "background" section above, there is a greater demand for versatile playing, yet there is little research to promote it. Since there is a high demand

[9] Information accessed through searching the University of Miami Digital Dissertations Online search engine. Search terms included "trumpet, trumpet 1999-2009, trumpet dissertation 1999-2009," http://iiiprxy.library.miami.edu [accessed August 12th, 2010].

[10] Information accessed through searching the University of Miami Digital Dissertations Online search engine. Search terms included "trumpet, trumpet 1999-2009, trumpet dissertation 1999-2009," http://iiiprxy.library.miami.edu [Accessed August 12, 2010].

for upper-register playing, it is imperative that a study explicitly focused on upper-register playing be conducted and communicated. There is not a single study tracking the path of upper-register playing from the Baroque period to the present or providing an all-inclusive in-depth study focusing solely on upper-register playing. Hence, this paper is intended to fill a gaping void in trumpet pedagogy.

The probe examines all aspects of trumpet playing in regards to how to execute upper-register playing more effortlessly. The first area of analysis emphasizes optimal equipment choices. With this focus, mouthpiece selection is investigated with regard to cup, rim, throat, and back bore sizes. The type of trumpet being played is also considered. This discussion includes details regarding bore size, weight, the tuning slide, the lead-pipe type, the gap between the end of the mouthpiece and the beginning of the lead-pipe, and specifically the placement of braces. Also included is an in-depth study of professional players' equipment.

Second, specific breathing techniques used while playing in the upper register have been researched. The study takes an intense look at the speed of air required to achieve certain notes, the amount of compression needed, the optimal posture while breathing, the variable effects of standing or sitting while playing, and the effects of breathing through the nose as opposed to the mouth. This aspect of the examination extends beyond trumpet players and envelops breathing techniques by all brass players. Therefore, it is possible to compare similarities, discover shared applications, and transport fresh knowledge across the boundaries of instruments.

Third, the physical aspects of playing the trumpet are analyzed. This portion of the study dissects which diet enhances the upper register, details how the structure of a

player's mouth including the jaw and teeth affects the upper register, discusses what types of physical activities might enhance the upper register, and illuminates how the size of a person may influence his or her ability to play in the upper register. Since no two people are identical in stature, the goal is to categorize tendencies.

Fourth, the work includes specific trumpet practices that will help increase a player's range. These routines will reference techniques of other players, method books, mouthpiece buzzing, pedal tones, long tones, and extreme flexibility exercises.

Lastly, there will be an interview protocol designed for professional upper-register players. The interviews include a series of five questions with a space for additional comments sent via e-mail asking these experts to offer what has or has not worked for them and to explain unconventional methods they have discovered through experience. In addition to interviews of current musicians, this study analyzes famous upper-register players from the past in order to ascertain how previously used equipment has changed in today's world. Performers from all genres will be assessed.

Purpose of Study

The purpose of this study is to provide a comprehensive, accessible analysis of how to maximize upper-register playing. Based on the writer's professional experience as well as research, it is hoped that the study will benefit all trumpet players, enabling them to achieve notes in the upper register with far less effort.

Research Questions

The specific research questions addressed in this study include:

1. What are the similarities between the approaches to playing in the upper register in the Baroque period and modern trumpet playing?
2. How much of upper-register playing is mental as opposed to physical? Is upper-register playing a learned trait, or is it based on talent?
3. If you do not have a strong upper register, how will it affect your ability to make a living as a professional musician?
4. What is the effect of the proper equipment on upper-register success?
5. How much does compression affect a player's ability to play in the upper register? Can a musician play all the same notes without using compression?

Research regarding playing in the upper register is partial due to the limited information on this specific topic. This study begins to fill the accessibility gap and examines the specific challenges of doing so.

CHAPTER TWO

LITERATURE REVIEW

This chapter outlines research on the methodology of upper-register playing regarding the approach, equipment, breathing, and physicality of this endeavor. The listed publications will include books, journals, and documented online interviews.

Books

Raymond Mase is the Chair of Brass at the Juilliard School of Music. According to Mase, David Hickman's book *Trumpet Pedagogy; A Compendium of Modern Trumpet Techniques* is the most complete, modern, "user's manual" on trumpet playing.[11] This book includes a wide range of material discussing all aspects of performance, a basic overview, dental considerations, embouchure formation and control, developing articulations, efficient practice, psychology, efficient breathing techniques, advanced range, common problems and suggested remedies, medical conditions that may adversely affect trumpet playing, and mouthpiece design. All of these components are large subject categories, and they have sub-categories accompanying them. Within the sub-categories, the book gives clearly stated, objective, and concise information regarding each topic. This book's target audience ranges from beginners to professionals. *Trumpet Pedagogy* is regarded as by far the most well-rounded and complete book on trumpet methodology

[11] David Hickman, *Trumpet Pedagogy; A Compendium of Modern Teaching Techniques* (Hickman Music Editions, 2006), v.

in print today. This publication has been used for research regarding general knowledge on all aspects of trumpet playing.

In 2008, Roger Ingram published a book entitled *Clinical Notes on Trumpet Playing; (Or, "What I did during my summer vacation. . . ")* regarding not only trumpet playing, but the journey an artist takes while studying music. This book gives exceptional insight on topics to be covered in this paper, such as health, equipment, and different types of players, and it also addresses principles of extending register. This book is for more advanced trumpet players, but its constituency is not limited to professionals. The author comments that the data contained in this book present his opinions and viewpoints.[12] Roger Ingram is one of the most highly regarded trumpet players in the field, and he is an expert in the field of upper-register playing. Harry Connick Jr. states, "Nobody plays as high, or as well, as Roger." This publication has been used as research for analyzing equipment, health, and principles of extending register.

The First Trumpeter is a book focused within the jazz genre. Most of the book addresses how to play in the jazz style, covering items such as articulations, phrasing, and interpretation of style. However, there is a small portion of the text that deals with range.[13] Author Jim Maxwell concentrates mostly on the physical aspect of playing trumpet in the upper register, but he also gives specific exercises to be played on the trumpet. While the material in the book is well stated, it is rather limited, not giving a huge insight into upper-register playing. This publication would best serve less advanced

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[12] Roger Ingram, *Clinical Notes on Trumpet Playing; (Or, "What I did during my summer vacation. . .")* (One Too Tree Publishing, 2008), xi.

[13] Jim Maxwell, *The First Trumpeter* (Charles Colin Music, 1982), 51.

players. This publication will provide research on practical exercises to be performed in upper register playing.

Trumpet High Tones by Ernest Williams[14] is a work solely dedicated to upper-register playing. There is a brief one-page explanation on how to practice. Though it is a succinct explanation, three techniques are discussed. These should be synchronized and accurately developed simultaneously: breath, lip, and finger technique.[15] The majority of the text's contents contain written-out exercises to be performed on trumpet. Upon reviewing the contents of the book, it is clear that these studies should not be performed or attempted by a beginning student. Rather, they are designed for a more advanced player who has previous knowledge about upper-register playing. This publication will provide research on practical exercises to be performed in upper-register playing.

Delbert Dale published a work about trumpet as part of a series of books for all instruments. The trumpet edition is a complete method on how to play the trumpet. The text incorporates subject matter in regards to equipment, embouchure, tone, idiomatic techniques, and practice problems.[16] All of these are large subject categories, which have sub-categories accompanying them. Dale presents an extensive description of each sub-category, thus giving insight on obstacles trumpet players face. However, there is limited material on the upper register. The embouchure is discussed in great detail and associated with upper-register playing, but upper-register playing is not discussed comprehensively. The text was written for trumpet players to use at any stage of their

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[14] Ernest Williams, *Trumpet High Tones* (Charles Colin, 1958).

[15] Ibid., 2.

[16] Delbert Dale, *Trumpet Technique* (Oxford University Press, 1965), v.

development. This publication will be used for research regarding general knowledge on all aspects of trumpet playing.

Trumpeters' and Kettledrummers' Art is a guide to Baroque performance practice. The book was written in two separate sections. The first segment of the text offers a panoramic view of the historical and theoretical instruction for learning to play trumpets and kettledrums.[17] This portion of the text eloquently states the origins of the trumpet and its function in society. The second section of the text gives practical advice for learning to play trumpets and kettledrums, and it is illustrated with rules and examples.[18] This portion of the guide discusses all aspects of the approach of trumpet playing including equipment, tuning, tonguing and range, as well as rules or prerequisites for becoming a trumpet player. Historically important, this book gives incredible insight to the approaches of early and baroque trumpet playing. This publication provides research regarding the history of where trumpet came from and when upper-register playing became first prominent.

Irving Bush was a former faculty member of Los Angeles College and a remarkable trumpet player of his day. In 1962, he wrote and published a book entitled *Artistic Trumpet Technique and Study*. This work includes a wide range of material discussing all aspects of trumpet playing, such as breathing techniques, embouchure, tonal production, extreme registers, and intelligent practice procedures. All of these divisions are large subject categories, which have sub-categories accompanying them.

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[17] Johann Ernst Altenburg, *Trumpeters' and Kettledrummers' Art* (The Brass Press, 1974), xv.

[18] Ibid.

Within the sub-categories, Bush gives credible insights on how to play the trumpet. The text thoroughly reports his approaches to playing the trumpet. The author dedicates a considerable amount of material on the extreme registers. There is a general overview on extreme registers as well as a full description of the proper steps to take in reaching upper-register success.[19] This book is for an advanced player with some previous knowledge of upper-register playing. This publication provides research regarding general knowledge on all aspects of trumpet playing.

Inside John Haynie's Studio is a book addressing all technical aspects of trumpet playing, and it also approaches the mental aspects of playing the instrument. While Haynie covers a wide range of subjects, each topical discussion is brief. This is particularly true in regards to upper-register playing. Few approaches are discussed, and exercises specific to trumpet are scarce.[20] As this selection does not provide an in-depth look at the practical approaches to playing trumpet, it has not been used for research.

Edward Tarr wrote and published *The Art of Baroque Trumpet Playing*. The book professes that prior to this text's inception, a true method containing basic exercises, technique, and a stylistically secure approach to Baroque music had been missing.[21] The work gives extensive insight on historical and modern instruments, exercises in the principale register, exercises into the mid-clarino register, articulations and intervals in

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[19] Irving Bush, *Artistic Trumpet Technique and Study* (Highland Music Company, 1962), 67.

[20] John Haynie, *Inside John Haynie's Studio* (University of North Texas Press, 2007), 27.

[21] Edward Tarr, *The Art of Baroque Trumpet Playing* (Schott Musik International GmbG & Co. KG, Mainz, 1999), vol. 1, 6.

the clarion register, exercises in upper registers, and exemplary studies and exercises from historical methods. This publication offers an extensive analysis on the modern as well as historical approaches of Baroque trumpet playing. This book is for an advanced player who studies Baroque music, or a player seeking to gain more knowledge about the approaches of playing in the Baroque style. This publication provides research regarding practical techniques and fundamentals of Baroque trumpet playing.

The Cat Anderson Method is a book solely dedicated to acquiring upper-register success. There are twelve technical studies written by Cat Anderson, as well as practical exercises to achieve upper-register success. The studies and exercises begin simply, and as the player progresses, they gradually increase in intensity. Upon finishing this collection, a player will be able to achieve extreme registers at will.[22] The concepts in this book are not appropriate for beginners or intermediate players, but exist solely for the use of advanced and professional trumpet players. Though the book proclaims that extreme registers are achieved at will upon the protocol's completion, it may take a single player one year or more to master each exercise. This publication supplies practical exercises to be performed in upper register playing.

Allen Vizzutti wrote and published *High Notes for Trumpet*.[23] This publication covers the following aspects of trumpet and upper-register playing: air flow/breath support, mouthpiece on lip pressure, mouthpiece placement, aperture size, posture, tongue placement, and mouthpiece size. The book is intended for trumpet players from

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[22] Cat Anderson, *The Cat Anderson Method* (Gwyn Publishing, 1973).

[23] Allen Vizzutti, *High Notes for Trumpet* (Village Place Music, 2009).

beginning to advance. This publication supplies materiel on general aspects of trumpet playing in relation to upper register success.

Sail the Seven C's[24] is a book intended for trumpet players wanting to achieve success in the upper register. The book covers general topics on trumpet playing including myths, embouchure, breath control and practical exercises. This publication is intended for trumpet players at any level and supplies research on the general aspects of trumpet playing regarding the upper register.

David Vining wrote and published *The Breathing Book.*[25] This book applies to all brass players, not solely trumpet players. There is an in-depth study of the inner workings of the diaphragm, chest muscles, lungs, and concepts of inhaling and exhaling. The exercises are intended for trumpet players from beginning to advanced. This publication provides general knowledge on breathing as well as different breathing techniques in regards to upper register playing.

Journals

In 2009, Martin Saunders[26] published an article entitled "Some Helpful Hints for the Upper Register." Saunders offers his opinion on what he thinks trumpet players should focus on while playing in the upper register. There are no practical approaches offered in this article, but concepts are explored by the author. Though Saunders makes

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[24] Clyde Edward Hunt, *Sail The Seven C's* (B-FLAT MUSIC PRODUCTION, 2000).

[25] David Vining, *The Breathing Book* (Mountain Peak Music, 2009).

[26] Martin Saunders, "Some Helpful Hints for the Upper Register," *International Trumpet Guild* (January 2009): 55.

good general points, this is not a comprehensive guide on how to approach upper-register playing. This publication has not been considered for research.

"Developing the Upper Trumpet Register" is an excellent article addressing upper-register playing. The author, Michael Brown, offers prerequisites to upper-register playing as well as specific exercises to enhance the upper register. In addition, he discusses the irrelevance of equipment in playing high notes.[27] Lastly, Brown includes an interview with Arnold Jacobs, the Chicago Symphony Orchestra's tuba player. Through the interaction, Jacobs discusses the relationship between air volume, air pressure, and range.[28] The exercises included apply to players who have a basic knowledge of trumpet, as well as proficiency in the low to mid range. This publication provides information regarding upper-register playing.

In 2007, Mike Vax published an article entitled "Hints for Building Range." The article is brief and only skims the surface of techniques for upper-register playing. However, the piece does briefly discuss air, embouchure, physicality, and common problems in trying to extend one's range. The commentary states that no deep, dark secrets, shortcuts, or other ways around achieving a consistent upper register exist.[29] Although helpful, the strategies in this article are very general. This inclusion is clearly not a comprehensive guide to trumpet or upper-register playing. This publication was not considered for research.

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[27] Michael Brown, "Developing the Upper Trumpet Register," *The Instrumentalist* (September 1997): 44.

[28] Ibid

[29] Mike Vax, "Hints for Building Range", *Getzen Gazette* (May 2007): 6.

Charley Davis wrote an article entitled "Masterclass: Solving Common Problems in Lead Playing." Though lead playing is usually specific to the realm of jazz, the text discusses how to play in the upper register. Therefore, the techniques offered in the article can be applied to trumpet playing in any genre. Davis discusses in depth breathing techniques and how to stay relaxed when playing in the upper register.[30] He also addresses different method books used in his quest to enhance his upper register. These selections include *Herbert L. Clarke Studies*, *Charlier Etudes*, and *Charles Colin's Lip Flexibility Studies*. Davis briefly discusses equipment and embouchure, but he does not discuss these issues at length. The concepts presented in this article are for intermediate to advanced players, and they should not be attempted by beginners. This publication provides material for practical performance exercises in the upper register.

Dr. Maury Deutsch published an article in the *Getzen Gazette* dissecting the trumpet mouthpiece. It is crucial for a successful trumpet career to find a proper fitting mouthpiece.[31] The article aims to clarify the functions and interactions of the dimensional mouthpiece characteristics.[32] All aspects of the mouthpiece are discussed and analyzed, including the cup diameter, cup depth, outer rim, inner-rim edge, throat, and backbore. Photographic examples are included as well. Deutsch communicates the importance of finding the mouthpiece that fits the player. He analyzes the mouthpiece,

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[30] Charley Davis, "Masterclass: Solving Common Problems in Lead Playing", *Windplayer - For Woodwind and Brass Musicians* (1996): 40.

[31] Maury Deutsch, "Dimentional [sp] Characteristics of the Trumpet Mouthpiece", *Getzen Gazette* (October 2007): 6.

[32] Ibid.

its functions, and considerations for players of different abilities. This publication supplies information regarding equipment, and more specifically the mouthpiece.

"Help Your Student Trumpeters Scale the Heights" is an article intended for band or orchestra teachers. The selection discusses subject matter in the areas of air, tongue, and embouchure. Each topic is discussed via the perspective of a teacher addressing the challenges of upper-register playing with a student. Since each exercise will not perfectly suit each learner, the mentor must forge a match between the exercise and the student's needs.[33] These selections are designed for beginning and intermediate players.[34] Advanced trumpet students should already have knowledge of the concepts discussed. This article delivers well-conceived concepts for beginning and intermediate players, but the notions are a bit elementary for this paper's intent. This publication has not been used for research.

Interviews

Jens Lindemann is a renowned trumpet soloist, former lead trumpet player for the Canadian Brass, and Professor of Trumpet at the University of California, Los Angeles.[35] Lindemann is also a graduate of The Juilliard School. In this interview, he recounts the physical aspects of breathing as a wind instrument player. Items discussed address

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[33] James Zingara, "Help Your Student Trumpeters Scale the Heights", *Teaching Music* (April 2006): 56.

[34] Ibid

[35] 2010; available [on-line] from http://www.artistshousemusic.org/videos/the+physical+aspects+of+breathing+as+a+wind+instrument+player

expanding the lungs during inhalation and controlling the airstream during exhalation. These are issues to be addressed prior to daily practice, and they occur in the absence of an instrument. Throughout this interview, topics are not penetrated deeply, and they can be considered appropriate for beginning to advanced players. This interview serves as research regarding breathing.

Barry Danielian graduated from the Berklee College of Music, and he has toured with Blood, Sweat, and Tears, Tower of Power, and Jon Bon Jovi.[36] In this exchange, the items that are addressed include the warm-up, the physicality of the instrument, muscle memory, and the demonstration of a range exercise.[37] Though only one exercise was demonstrated, Danielian provides a concise, systematic approach to building the upper register. He also advocates building range while maintaining musicality, and he stresses the importance of high notes being used strategically, authentically, and competently. The items discussed in this interview can be advantageous for beginning to advanced players. This publication provides research regarding practical upper-register techniques.

Literature Review Summary

Due to the demand on trumpet players to achieve a consistent upper register, many sources are available that discuss the various aspects of upper-register proficiency. Published documents directly related to trumpet and upper-register playing exist in many different forms, including but not limited to books, journals, and interviews. This paper

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[36] 2010; available [on-line] from http://www.barrydanielian.com/biography.html

[37] 2010; available [on-line] from http://www.youtube.com/watch?v=-IB4omxzqOg

is intended to consolidate the research as well as add the approaches of successful contemporary trumpet players, serving as a complete methodology to upper-register trumpet playing. It is hoped that it will offer trumpet performers simple, yet proven, practical methods, which can improve proficiency in this critical area.

CHAPTER THREE

METHOD

Research Questions

The specific research questions addressed in this study include:

1. What are the similarities between the approaches to playing in the upper register in the Baroque period and in the modern-trumpet playing era?
2. How much of upper-register playing is mental as opposed to physical? Is upper-register playing a learned trait, or is it based on talent?
3. If you do not have a strong upper register, how will it affect your ability to make a living as a professional musician?
4. What is the effect of the proper equipment on upper-register success?
5. How much does compression affect a player's ability to play in the upper-register? Can a player hit all of the same notes without using compression?

Procedures for the Motives for Choosing this Topic

Upper-register playing is one of the most discussed topics amongst trumpet players today, as it is considered an extremely difficult skill to acquire. There are extensive recordings of trumpet players from all genres demonstrating upper-register playing, and master classes, concerts, and clinics exist as forums for observational study. Thus, it is clear that proficiency with the upper register is a coveted prize.

While this writer was attending high school, Maynard Ferguson, one of the most competent and innovative players in the upper register, put on a concert with his band. After the performance, students at the school were able to discuss, play, and be critiqued on their trumpet and upper-register playing. Several years later, while I attended college, Roger Ingram became an Artist in Residence at Chicago College of Performing Arts of Roosevelt University. Roger Ingram is considered to be one of the leading players and authorities on upper-register playing as well. Mr. Ingram coached a select number of students in regards to his expertise. The energy and intensity acquired through working with both Ferguson and Ingram coupled with the innate fascination of playing in the upper register, and this fusion led to an interest in an in-depth analysis of all aspects of upper-register playing.

Procedures for the Selection of Topics of Discussion

The first area of analysis addresses the types of equipment used that will help trumpet players obtain the most desirable results. This aspect of the study looks at mouthpieces in regards to cup, rim, throat, and backbore size. The type of trumpet being played is also examined concerning bore size, the weight, the tuning slide, the lead-pipe type, the gap at which the mouthpiece fits in the instrument, and specifically where braces are placed on the trumpet. To complete this section, a comprehensive survey of professional players' equipment is provided and critiqued.

Second, specific breathing techniques used while playing in the upper register have been researched. The study scrutinizes the speed of air required to achieve certain notes, the amount of compression needed, posture while breathing, stance while playing,

and breathing practices regarding the nose or the mouth region. In an effort to compare and contrast the similarities, potential for crossovers, and the unknowns discovered through research, this aspect of the study extends beyond trumpet players and reaches out to breathing techniques employed by all brass experts.

Third, the physical aspect to playing the trumpet has been analyzed. This portion of the study dissects which diet enhances the upper register, how the structure of a players' mouth, including the jaw and teeth, affects the upper register, what types of physical activities might enhance the upper register, and the impact of a person's size on his or her ability to play in the upper register. Since no two people are identical in stature, the goal is to put people with similar tendencies in the same category.

Fourth, the study includes specific trumpet exercises that will increase a player's range. These include methods of other players, combined method books, mouthpiece buzzing, pedal tones, long tones, and extreme flexibility exercises.

Lastly, an interview questionnaire has been sent via e-mail to professional upper-register players. It contains a series of five questions with an option of additional comments for these musicians, which illuminate successes, failures, and unconventional methods they have discovered throughout their careers. In addition to interviews of current performers, this study analyzes famous upper-register players from the past. This approach yields information regarding the evolution of equipment. Since players from all genres have been assessed, the scope of the research is inclusive.

Procedures for Creating Suggestions for Upper-Register Playing

Suggestions about each of the discussed subjects listed above (i.e. equipment, breathing, physicality, and methods) appear at the end of each topic, as well as at the end of the essay. Therefore, a synthesis of the research acquired through the formal analysis of upper-register trumpet playing has been offered. This portion of the paper contains a summary on the detailed research regarding each aspect of upper-register playing.

CHAPTER FOUR

EQUIPMENT

The goal of this chapter is to make an in-depth analysis of all aspects of trumpet equipment. With this focus, mouthpiece selection will be investigated with regard to cup, rim, throat, and back bore sizes. The type of trumpet being played will also be considered. This discussion will include details regarding bore size, the tuning slide, the lead-pipe type, the gap between the end of the mouthpiece and the beginning of the lead-pipe, and specifically the placement of braces. Also included will be a comprehensive study of professional players' equipment.

Mouthpiece

There is nothing more crucial for a successful trumpet career than a properly fitting mouthpiece.[38] It is important to analyze all aspects of the mouthpiece to fully understand the player's potential for ideal equipment. Basic criteria for judging the efficiency of a mouthpiece include the quality of tone in the lower register, the ease of playing in the legitimate upper register, and the lip flexibility obtainable in the middle register.[39]

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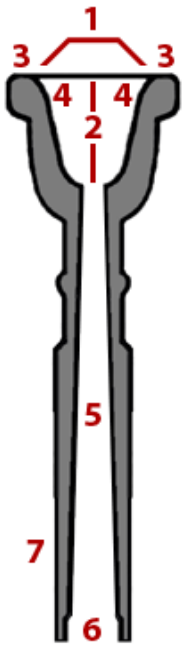
[38] Maury Deutsch, "Dimentional [sp] Characteristics of the Trumpet Mouthpiece", *Getzen Gazette* (October 2007): 6.

[39] Ibid

Example 4.0. Basic Framework of a Trumpet Mouthpiece



[40]

Each item of the mouthpiece will be discussed in relation to the number on the diagram.

Number one in Example 4.0 refers to the cup diameter. A large cup diameter generally achieves a big full sound and is intended for low-to-middle register playing. A large cup requires work from more muscles in the face, and endurance can therefore suffer. With a medium cup diameter, the air pressure forces more of the energy into the upper partials, with a corresponding increase of brilliance and a brighter sound.[41] A small cup diameter will increase the aforementioned qualities, thus producing a much

[40] Ibid

[41] Ibid

brighter, laser–like sound. A small cup diameter can also increase endurance and is generally used to achieve upper and extreme registers of the trumpet.

Number two in Example 4.0 refers to the depth of the cup. The depth of the cup has a large effect when choosing a mouthpiece. A player should be able to achieve all notes of all registers with any depth in cup. However, differences do exist in regards to this particular dimension. A deep cup has a very dark, full sound. In general, a player would use a deep cup for either classical playing or jazz improvisation. A shallow cup subtly aids the upper register, and the deeper segment helps volume. Upper-register playing naturally lends itself towards a shallow cup, but there is always an exception to the rule.

Numbers three and four in Example 4.0 refer to the outer and inner rim. The rim is the part of the mouthpiece that is placed directly on the player's lip. There are many factors to consider when selecting a mouthpiece rim that is comfortable for the player while still yielding the desired results in the upper register. With every rim, there are pros and cons. The first feature a player should consider is the shape of rim. The width of the rim will influence how much pressure a performer can apply when playing.[42] For example, if a player chooses a wider rim the pressure is dispersed more evenly, allowing the player to use less pressure while playing. Of course, there are different options considered for the rim of the mouthpiece, such as a wider and flatter, a narrow curved rim, a sharp or raised inner rim, and a smooth lowered inner rim.[43] Upon taking a closer look at each of the rim choices listed above, the advantages and disadvantages of both

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[42] Allen Vizzutti, *High Notes for Trumpet* (Village Place Music, 2009), 8.

[43] Clyde Edward Hunt, *Sail The Seven C's* (B-FLAT MUSIC PRODUCTION, 2000), np.

should be noted. The wider and flatter rim tends to be very comfortable on a player's lips, and it facilitates endurance in the upper register.[44] However, when choosing a wider, flat rim, a player's flexibility can suffer. Thereby, it is more difficult to manipulate the trumpet in the upper register and perform technically and accurately. A few examples of a mouthpiece with this type of rim are Schilke 12A4a, Schilke 15A4a, and Al Hirt modelA Jettone.

If a player chooses a narrow, curved rim mouthpiece, he or she will get the opposite effect of the wider, flat rim mouthpiece. With the narrow rim, flexibility and the ability to manipulate the trumpet is increased, but endurance can suffer. In his book "*High Notes for Trumpet*" Allen Vizzuti says, "Extremely wide and deep mouthpieces, and extremely narrow and shallow mouthpieces – for the majority of players – are stupid." A few examples of a mouthpiece with this type of rim are the Schilke 13B, the Gary Radtke (GR), and the Bach 1B and 3B.

The next type of rim discussed is a sharp, or raised inner rim. One advantage to this mouthpiece rim is that it generally gives a high response to players, and this makes it easier to slot partials in different registers while increasing accuracy. However, this type of sharp mouthpiece can cut into a player's lip, and injuries may yield negative effects. A few examples of mouthpieces with this type of rim are any with a Laskey rim, and any of the Bach W rims. These rims are very sharp and pronounced.

Lastly, there is a smooth lowered inner rim. The advantages that can potentially come with this type of rim are increased endurance and an open full sound. However, the response of this type of rim can be much slower than that of the sharp rim mouthpiece. A

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[44] Ibid.

few examples of these types of mouthpieces include the Yamaha 14A4a, the Yamaha 6A4a, the Hammond Design Augie Haas Model, and a Marcinkiewicz Bobby Shew Model 1.25.

Number five in Example 4.0 refers to the throat. The throat of the trumpet can go from extremely tight and narrow to large and open. Although a large throat favors a greater volume of tone, there is difficulty in playing pianissimo, particularly in the upper register.[45] The goal for any player is to create a resistance that is right for him or her. Obviously, when a hole is too big in the throat, it is hard to maintain a steady airflow. A smaller throat can potentially make upper-register playing easier, but the mid to low register can suffer. Given the demands on a trumpet player today, the goal is to find a happy medium so that no register suffers disproportionately.

Number six in Example 4.0 refers to the backbore. The backbore is the bottom third of the mouthpiece, and it is encased within the shank. Putting the wrong backbore on a good cup can cause a mouthpiece to sound like a kazoo.[46] It is essential for all of the pieces to work together on the mouthpiece to maximize full potential. Until a player is content with a mouthpiece cup, it is best not to adjust the backbore.[47]

Last to be addressed is the comparison of Baroque and Modern mouthpieces. Among the first to entertain the idea of playing a modern mouthpiece on a Baroque instrument was Don Smithers. The result that Smithers achieved by this approach was less than favorable. Therefore, he switched to an authentic eighteenth-century mouthpiece

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[45] Maury Deutsch, "Dimentional [sp] Characteristics of the Trumpet Mouthpiece", *Getzen Gazette* (October 2007): 6.

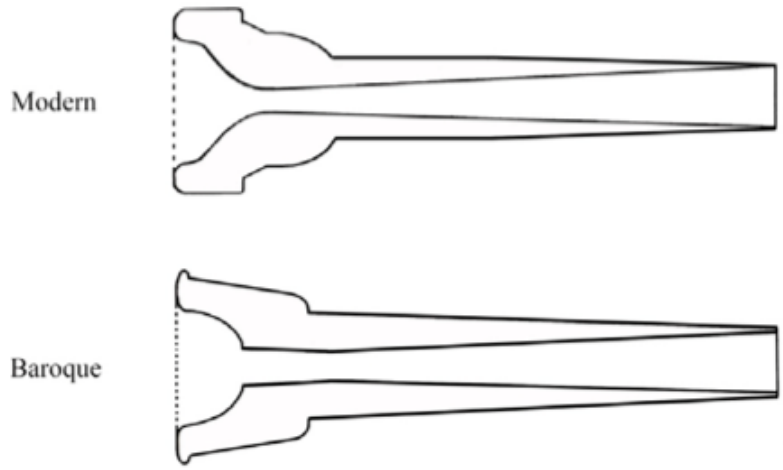
[46] Allen Vizzutti, *High Notes for Trumpet* (Village Place Music, 2009), 9.

[47] Ibid.

that he discovered. After using the genuine equipment, Smithers testified, "It was not until the original mouthpiece was used that [the two lowest] notes became playable. And at this point I also noticed a vast improvement in the upper clarino register, including some remarkably reliable non-harmonic tones."[48]

In general, modern players use smaller equipment to achieve the desired result in the upper register. This is not the case with Baroque equipment, but in fact, the rim is a large factor.

Example 4.1 Modern and Baroque Mouthpieces[49]



He elaborated about choosing an appropriate rim: "A rim which is too wide hinders the embouchure somewhat, in that it reduces the freedom of motion of the lips and covers

[48] Don Smithers, "The Baroque Trumpet After 1721: Some Preliminary Observations. Part One: Science and Practice," *Early Music* 5, no. 2 (April 1977): 178.

[49] A. Roseborrough, "The Modern Pedagogical Potential of the Baroque Natural Trumpet" (DMA Essay., University of Miami, 2010), 22, 5.

them too much. A rim which is too narrow, on the other hand, does not promote an accurate or enduring embouchure and tires the lips in a short time."[50]

Regarding cup depth, Johann Altenburg wrote that a trumpeter should select a mouthpiece with a cup deep enough to play both loud and soft dynamics. The cup depths of Baroque mouthpieces are, on average, much greater than those of present day; the shallowest Baroque mouthpieces have depths similar to those of the deepest modern mouthpieces.[51]

Overall, there is no real advantage in joining a modern mouthpiece with a natural trumpet. The combination hinders timbre, endurance, and overall flexibility. Though it might be helpful to use a modern mouthpiece when initially attempting a Baroque instrument, the true authenticity will not be achieved until a Baroque mouthpiece is employed. The main reason and biggest difference in using a Baroque mouthpiece over a modern mouthpiece is authenticity.

Deutsch states in his article,

> Remember that the ideal mouthpiece for you cannot be determined without playing it. The choice must be based on your lip, mouth, teeth, and facial characteristics. A cardinal rule is to avoid extremes in each of the constituent parts of a mouthpiece. One must choose a mouthpiece that not only meets the specific needs of the player at the time, but one that also provides the versatility to meet future needs. It is important for us all to realize that choosing a mouthpiece is more of an art than a science.

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[50] Johann Ernst Altenburg, *Trumpeters' and Kettledrummers' Art* (The Brass Press, 1974),

[51] Anthony Baines, *Brass Instruments: Their History and Development* (London: Faber and Faber, 1976), 125.

Trumpets

Currently, there are over eighty worldwide manufacturers producing trumpets each day. As listed above, the items to be addressed in regards to the trumpet in conjunction with upper-register playing are bore size, weight, the tuning slide, the lead-pipe type, the gap between the end of the mouthpiece and the beginning of the lead-pipe, and specifically the placement of braces.

A frequently-asked question in trumpet circles is, "How critical is the bore size?" With upper-register playing, the bore size can be a critical aspect of achieving success. First, the design of the bore is not determined by the size of the hole in the piston, but rather by the size of the inside slide tubes of each of the valve slides (1st, 2nd and 3rd valve slides) and the tuning slide.[52] According to trumpet maker Fred Powell, the general bore sizes offered on Bb trumpets range from .453″ to .468″. In regards to bore size, Roger Ingram says,

> Within the huge variety of Bb trumpets on the market today to choose from, I prefer a medium bored trumpet. Specifically, my choice of medium bored trumpet is the Jupiter XO Series 1600I which I designed for the Jupiter Band Instrument Company. This horn has a .453 uniform bore. "Uniform" meaning the same bore size throughout the instrument: after the lead pipe and up to the bell flare. This is as opposed to a "step bore" trumpet, which is comprised of 2 (or more) different bore sizes within the same parameters (between the lead pipe and the bell flare.) Because the bore classification of a Bb trumpet is determined by the bore size of the valve section, it is possible to have either a uniform bore or a step-bore design within the confines of what is considered "medium bore."

It is a common misconception that a trumpeter needs a big bore size to get a big beautiful sound. Bobby Shew states, "I previously played large bore instruments because I had senselessly bought into the old rumor or consideration that one needed to play large

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[52] Andrew Naumann, "The Trumpet and its Bore Size – How Critical is it?", *Gezten Gazette* (April 2002): np.

equipment if one wanted a big sound and ease of playing." In general, the smaller the bore size, the more resistance is created. This correlation makes the trumpet more efficient for upper register success. Powell also states that, the most common bore size sold today by trumpet manufacturers is medium large, which is .459 or .460, but upper-register success can be achieved with an instrument of any bore size.

When considering which bore size to choose, it is imperative to remember that differences in bell size and the leadpipe will change the resistance, timbre, and rate at which air passes through the horn much more than the bore size will.[53] Therefore, less attention should be given to the bore size and more attention should be given to leadpipes and bells.

As previously stated, the leadpipe can have a tremendous impact on upper-register success. There are two different types of leadpipes. There is a standard leadpipe and a reverse leadpipe. A reverse leadpipe is a particular combination of a leadpipe and tuning slide that allows for a longer conical (tapered) section within the leadpipe while eliminating the bore "gap" in the upper sleeve of the tuning slide.[54] Hickman expresses that the principal advantage to having the reverse leadpipe rather than the standard leadpipe is that it improves both the intonation and overall flexibility. Obviously, this combination can enhance upper register playing. However, Hickman also states that there are disadvantages of the reverse leadpipe, including the fact that slotting notes becomes more difficult. Notes are less stable within a tapered air column, and the lack of

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[53] Ibid.

[54] David Hickman, *Trumpet Pedagogy; A Compendium of Modern Teaching Techniques* (Hickman Music Editions, 2006), 342.

bracing at the end of the bell is also problematic.[55] Through a system of trial and error, a player needs to select a leadpipe which is suitable.

Directly connected to the leadpipe is the tuning slide. In general, there are three different tuning-slide shapes, which include those that are square, semi-round, or round. The diameter and curvature of the main tuning slide have a considerable effect on the tone, articulation, and blow resistance.[56] Blow resistance can highly affect the ability to play in the upper register. The square tuning slide has pointed angles and provides more air resistance, thus giving a player good slotting and a bright tone.[57] The semi-round tuning slide provides a similar result to the square, but it creates a slightly less resistant, yet even, flow of air.[58] Finally, the round tuning slide offers the least amount of resistance, and it produces the darkest timbre.[59] In general, less resistance is not a desired result of upper-register playing. A musician wants to find a good balance between a free blowing horn and one with enough resistance to create optimal efficiency. The goal is for the player to control the trumpet rather than the other way around.

Professional Analysis

Professional trumpet players were asked three questions regarding equipment.

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[55] Ibid., 343.

[56] Ibid., 335.

[57] Ibid., 336.

[58] Ibid.

[59] Ibid.

First, what equipment do they use for upper-register playing and why? Second, what is the effect of the proper equipment on the upper register? Lastly, how does a player go about finding optimal equipment? Each question will be addressed separately.

In general, the majority of players who answered the questionnaire use custom equipment for both mouthpieces. The only mouthpiece that was used by multiple players was the Marcinkiewicz signature mouthpiece designed by Roger Ingram. Other performers utilize different model mouthpieces also made by Marcinkiewicz. The mouthpieces the musicians played from Marcinkiewicz shared the fact that they had a medium round rim as well as a shallow and narrow cup diameter. The majority of subjects questioned recommended the use of the smallest mouthpiece which can still produce a desirable, even sound throughout registers. The advantage of playing a shallower mouthpiece in the upper register is that it will minimize the energy loss and help maintain air speed. Greg Gisbert recommends,

> I use two mouthpieces for upper register playing. First, the Bobby Shew Lead made by Yamaha. I use that because it is more versatile and can still get a warm sound in the low register while still able to execute the upper register. If I have a lot of lead on an extended tour, I play the Roger Ingram model Marcinkiewicz because it allows me to play more consistently for longer periods of time and it is easier to play in the upper register.

Even though most players have designed and used custom equipment to suit their musical demands, everyone generally plays a shallower mouthpiece. However, differences do exist with rim use. Rim choices vary between wide and flat, medium round, or a sharp inside corner or shoulder. There was little to no discussion about backbores and throat sizes.

As far as trumpets are concerned, Yamaha was the most popular brand employed. The most common bore size was medium, though there were some musicians who promote medium-large and large-bore horns. Players discussed their preference in mouthpiece much more than their trumpet. Bobby Shew expresses that perhaps the essential and more important choice in equipment is in finding a mouthpiece.

The consequences of selecting improper equipment when playing in the upper register are disastrous. Rashawn Ross warns, "You don't run a marathon in wing tips." The respondents unanimously professed that a player needs the right tool for the job. It is also purported that there is no "magic mouthpiece" or instrument that will guarantee an increase in sound quality or range. Rather, the proper equipment can make a player's job much easier. The correct match can prevent injuries as well as career-ending risks from entering through a performer's doors.

Finding optimal equipment is a very personal endeavor. The majority of subjects insist that a player needs to try out as many mouthpieces and trumpets as he or she can possibly acquire. However, both Bobby Shew and Roger Ingram caution that a player must know how to test equipment. In fact, they have shared many lengthy conversations on this topic. Roger cites Bobby Shew's method of how to find proper equipment and agrees with him.

> A VERY important aspect of testing horns is knowing HOW to test. I have a simple suggestion and if it is too much for your current chops, adjust it to fit your capabilities.
>
> 1. Get a simple and decent warm-up but don't overwork your chops. Just get them somewhat working enough to do the test. Use your current horn for this as well as the initial test on step 2.
>
> 2. Using only low C to high C, Arpeggiate the lower octave (C-E-G-C) and then continue upward to high C using the basic C scale

> (diatonic.) Hold the high C for a few seconds just to check for how much stress your body is using to do this. Do it 2 more times identically to ensure that you are aware of the body sensations.
>
> 3. Select a different trumpet and do the exact same process as in step 2, 3 times, measuring your body sensations. It can really help if you are able to do these tests with your eyes closed as it helps internalize your awareness of the kinesthetic reactions.
>
> 4. If the process on step 3 gives you a sensation of greater ease, the horn goes into the YES category. If the sensation is greater stress, then it's a NO category. Keeping recorded notes on paper might be a help so as to remember over a period of time. If you're not certain of the differences, go back to your primary horn and alternate again. It COULD be that they both might feel very similar. If so, note that on paper.
>
> 5. Repeat the process with a different horn and make the categorical decision. Don't rush the process and rest periodically so you don't overtax your chops.
>
> Assuming you have 4 or 5 horns to try, you might find that 2 feel easier than your current one and the others feel harder to play. Eliminate the ones that DON'T make playing easier. Write down the names and models (maybe even serial numbers) of those in each category for further reference. So, EASE OF PLAYING is the primary objective but QUALITY OF SOUND is of equal importance. It's possible to find a horn that seems a lot easier to play high on but the sound might be extremely strident and irritating to your ears. NO ONE should play an instrument that doesn't please their ear! It's a matter of what type of music you will be playing that will be a major determining factor in your ultimate decision.

Since no two people are built the same, what works for one person will not necessarily work for another. Paul Stephens in his interview quotes Maynard Ferguson saying, “One man’s sugar is another man’s poison.”

CHAPTER FIVE

PHYSIOLOGICAL & PSYCHOLOGICAL FACTORS

Playing trumpet requires a mentally and physically strong person. Approaching the upper register further increases the intensity of the psychological and physiological effort of on this endeavor. This chapter will explain which diet enhances the upper register, detail how the structure of a player's mouth including the jaw and teeth affect the upper register, discuss what types of physical activities might enhance the upper register, and illuminate how the size of a person may influence his or her ability to play in the upper register. Since no two people are identical in stature, the goal is to categorize tendencies.

Diet & Exercise

In any discipline of sport, when an athlete is training, one of the most crucial aspects to examine is diet. When watching a sporting event on television, for example, one can clearly witness what athletes drink and eat before, during and after an event. This principle also applies to upper-register playing on the trumpet. A performer's body needs nutrients to reach the highest level of aptitude. Roger Ingram discusses in this book; first and foremost, a trumpeter needs to drink a lot of water. A typical adult is comprised of 60 to 70 percent water. This statistic shows why it is important to stay hydrated. It is best if a player can avoid beverages, such as soda, coffee, or alcohol, that will have a dehydrating effect.

Food choices are also important. Playing on an empty stomach should be avoided. This practice forces a player's body to use reserve energy, and this can produce a sluggish performance. It is crucial to give the body energy and nutrients to utilize while playing, especially during the intense, physical effort of upper-register work. Foods that will help the body before playing are those that are high in protein. Before a concert, Lew Soloff has been known to eat a hard-boiled egg, which is high in protein. Soloff is one of the foremost authorities on upper-register playing, and he was a former member of the band Blood, Sweat, and Tears. Also, a player's diet should include a variety of fruit, vegetables, potatoes, and nuts.[60] Improvements in physical conditioning correlate with improvements in playing. Cardiovascular exercise can enhance a player's overall ability to perform consistently in the upper register. Rafael Mendez recommends swimming as the best exercise for a brass player because it promotes breath control and overall physical fitness.

Dental Structure (Teeth)

Since the trumpet rests directly on a player's lip, the structure of the teeth has a tremendous impact on a musician's ability to play in the upper register. Obviously, a player should brush and floss twice a day, rinse after every meal, and receive a

[60] Roger Ingram, *Clinical Notes on Trumpet Playing; (Or, "What I did during my summer vacation. . .")* (One Too Tree Publishing, 2008), 3.

professional cleaning from a dentist once or twice a year.[61] It is extremely difficult to play trumpet without any teeth, so dental health is a high priority.[62]

A person's facial structure is comprised of many variables, and no two individuals have identical proportions. This makes it difficult to discover a single facial structure which optimizes upper-register performance. A player could have teeth that are crowded or protruding, noticeable gaps, or teeth that are loose or crooked. All of these factors have a large impact on both how a trumpet player forms an embouchure and where he or she places a mouthpiece. Any irregularity in a player's teeth could cause the inner lip to be penetrated by the intruding tooth. This presence could result in cuts, pain, and/or injury. In general, the most ideal teeth are flat and square, and a good set can be an invaluable tool for a trumpet player.[63] A common myth amongst trumpet players is that a gap between a player's two front teeth aids upper-register playing. There is no conclusive evidence promoting this theory, but there are several notable upper register players with sizeable gaps between their front two teeth. These players include Jon Faddis, Maynard Ferguson, and Roger Ingram.

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[61] Ibid., 4.

[62] Ibid.

[63] David Hickman, *Trumpet Pedagogy; A Compendium of Modern Teaching Techniques* (Hickman Music Editions, 2006), 38.

The Embouchure

The word "embouchure" is derived from the French word "bouche," meaning "mouth."[64] The embouchure is the direct placement of the mouthpiece on the lips. Since the modern trumpet only has three valves to help change pitch, all trumpet players must rely on their embouchure for flexibility, range, tone quality, and intonation. Of critical importance is the ability to coordinate the tongue, teeth, lower jaw, mouthpiece, and airflow. All parts need to synchronize in order to achieve efficiency on the trumpet.

According to David Hickman, trumpet embouchures fall into two main categories. The first category includes the "fixed jaw" in which there is a good vertical alignment of the front and bottom teeth in accordance with the lower jaw. The second category, on the other hand, consists of the "floating jaw," and in this type, the lower jaw is brought forward to better align with the front teeth. Clearly, differences between the two embouchures exist, but neither holds in the realm of upper-register playing.

Another perspective on embouchures for all brass players is viewed through the lens of the Donald Reinhardt method. This system is based on a pivot-and-tracking technique. Donald Reinhardt writes,

> THE PIVOT SYSTEM is a scientific, practical, proven method of producing the utmost in range, power, endurance and flexibility on the trumpet, trombone and all other cupped-mouthpiece brass instruments. This system, working on tried and tested principles, first of all analyzes and diagnoses the physical equipment of the player and then presents a specific, concrete set of rules and procedures which enable the individual to utilize, with the greatest possible efficiency, the lips, teeth, gums, jaws, and general anatomy with which he is naturally endowed. The study of the PIVOT SYSTEM is absolutely essential for all brass instrument performers because strict adherence to a musical approach deprives the

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[64] Ibid., 43.

> student of basic mechanical necessities which are vital to his uninterrupted improvement on the instrument.[65]

The Reinhardt Foundation states,

> The method states that although the Pivot System is named after the embouchure motion Reinhardt referred to as a "pivot," the system as a whole takes into account what Reinhardt called the three primary playing factors. These aspects include the entire embouchure formation (including the lips, mouth corners, cheeks, and entire facial area), the tongue and its manipulation, and the breathing. The goal of the Pivot System is to coordinate all three components so that they function properly as a synchronized unit. These three playing factors will vary in importance according to the stage of development of the student.[66]

Although many methods place primary importance on breathing, Reinhardt feels that focusing on breathing as the sole means of eliminating playing faults is similar to forcing a woodwind player to perform on a bad reed.[67] Reinhardt states, "If a very fine oboist selects an excellent instrument but uses a defective reed, the results will suffer regardless of whether his breathing is correct or incorrect. The same holds true in brass playing!"[68]

The Reinhardt Foundation further states,

> This exemplifies the variability of Reinhardt's instructions from student to student. In one instance, Reinhardt might have suggested focusing on a particular aspect of breathing, and to the other, he may have recommended working on the embouchure or tonguing. This was not because Reinhardt's instruction was untested and in flux, but rather because he recognized the stage of development for each particular student. Thus, he understood the precise focus necessary to achieve the optimal benefit for

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[65] 2011; available [on-line] from http://www.magikflute.com/reinhardtfoundation/method.htm

[66] Ibid.

[67] Ibid.

[68] Ibid.

> each learner. Since Reinhardt developed a system for tracking mouthpiece movement and classifying embouchures, his protocol can be an effective method for upper register playing.[69]

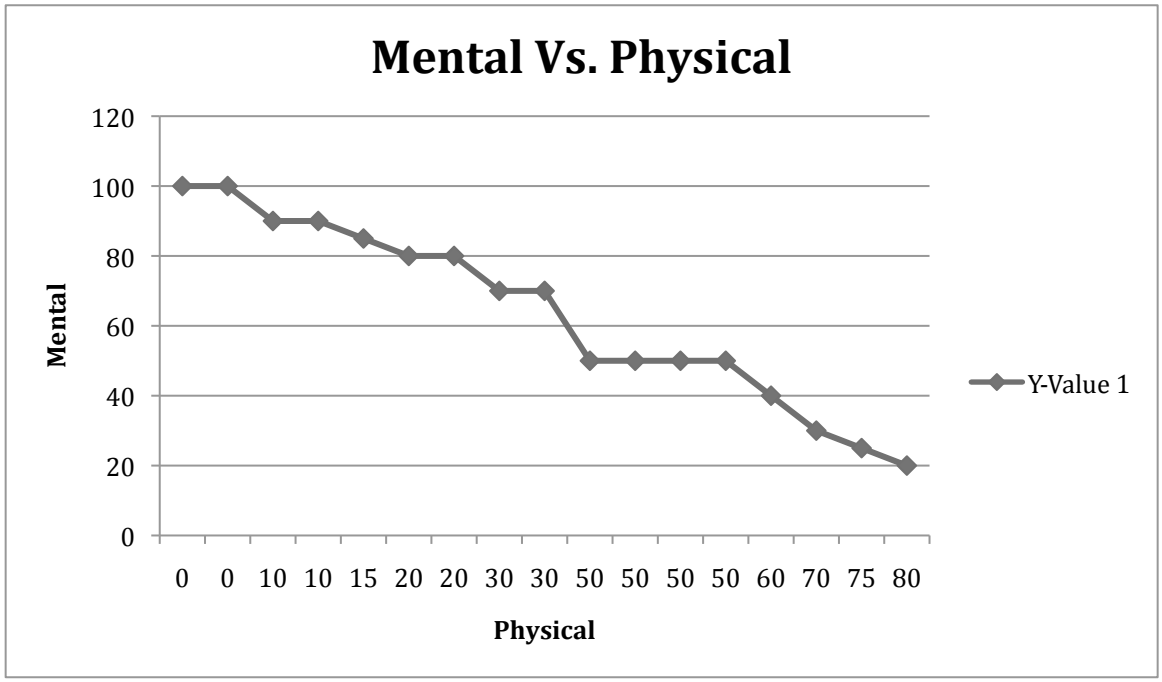
Professional Analysis

In regards to the physical and physiological aspects of trumpet playing, two questions were asked to the professionals. First, respondents were asked, "What percentage of high-note playing is mental as opposed to physical?" Second, the question, "Is upper-register playing a learned trait or is it based on natural ability?" was put forth.

The first inquiry had a very mixed response. The range included some players reporting that upper-register playing is 100% mental, and others conveying that this endeavor is 80% physical. Greg Gisbert references famous baseball player Yogi Berra saying, "Baseball is 90% mental and the other half is physical." Table 1 represents all answers.

[69] Ibid.

Table 1 Percentages of Mental Vs. Physical



Certainly, most players believe that upper-register success is more mental than physical. Only four subjects said that playing high is more physical than mental, and there was one subject who could not deliver a percentage. However, he does believe that the mental aspect tends to be underestimated with all aspects of playing. Roger Ingram verbalizes, "On a physical level, you could teach a chimpanzee to access the upper register. However, a chimp's mental capacity would be unable to control it."

In addition to the percentages that were submitted, there were recurring comments weighing the importance of mental versus physical importance. The majority of subjects articulated that a player must be able to think and hear the music in the upper register before attempting to play it. Also, in order to play consistently in the upper register, most professed that a player needs a certain attitude, personality, and confidence. Accessing the upper register is a punishing physical endeavor. In accordance with that, tension can

either expose or incite problems. Chad Shoopman reveals, “Players often forget that a G on the top of the staff was high for them at one point. Slowly, it becomes familiar.”

Responses to the second question unanimously supported the claim that upper-register playing is a learned trait. The overwhelming majority of subjects reported that they had to learn how to do it rather than it just coming naturally. The journey toward upper-register proficiency is easier for some travelers than it is for others, but it is a trip that requires learning. Participants in the survey stressed the magnitude of time and effort that were necessary for success. For instance, Jon Faddis asserts, “Many people call me a “natural” player, but don’t realize all of the hours and hours of practice that I put in, starting when I was ten years old!” Every subject insisted that with practice, inspiration, and hard work, anyone can learn to play in the upper register and extend his/her range.

CHAPTER SIX

BREATHING

One of the most physical components of playing not only the trumpet, but any wind instrument, is the breathing. While mastering a trumpet, players must acquire the mindset of an athlete. After all, succeeding in the upper register requires extensive control of the body. When a professional athlete is training for a game, fight, or match, countless hours of conditioning precede each event. Likewise, in order for a trumpet player to build endurance, strong lungs, and the ability to withstand the resistance and back pressure caused by upper-register playing, countless hours of preparation are mandatory. In this chapter, different aspects of breathing are discussed and compared in an effort to ascertain which can produce the best possible outcome with the least amount of work.

There are two different ways to move air through a trumpet. Essentially, the player must decide whether or not to use compression. The upper register can be reached with or without it, but the decision heavily impacts the acquired sound. First, it is imperative to discuss good breathing techniques regardless of the type of breathing a player employs.

Posture

The first facet to address is posture. Good posture is important because it allows airflow to travel through the body in an uninterrupted manner. Whether a player is sitting or standing, the skeleton is designed to deliver weight to the chair or floor in cooperation with gravity, and when a player relies upon his or her bones in this way, balance is achieved.[70] The key to good posture is balance. Balance is an internal, lively sensation, not the stagnant holding of a position.[71] David Vining states, "When a player is balanced, he or she can use all perspective muscles to create resonance because energy is not being expended to hold up the body." Similarly, it is important that a musician does not sit up too straight, or perform while slumped over. Both can inflict unnecessary tension and result in a loss of balance. Playing the trumpet is a challenging endeavor, and instrumentalists do not need to add to the burden with poor posture.

Inhalation

After a player has established balance, relaxation, and good posture, the next step in breathing is the inhalation. This topic will first be discussed using non-compressed air. As a player inhales, the thoracic diaphragm makes its descent and in doing so, it pushes down on the contents of the abdominal cavity.[72] The organs enclosed in the abdominal cavity get squeezed by the motion of the diaphragm, and they are then moved down and

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[70] David Vining, *The Breathing Book* (Mountain Peak Music, 2009), 1.

[71] Ibid.

[72] Ibid., 13.

out.[73] In simpler terms, the intercostal muscles in the chest contract, lifting the ribcage and expanding its diameter. In conjunction with that motion, the diaphragm contracts downward to draw air in and create room for vertical lung expansion.[74] The intercostals make up about twenty-five percent of the work, and the diaphragm makes up about seventy-five percent.[75] When breathing without compression, it is crucial for the player to take in air, thinking "Ahh" to stay relaxed. When a player inhales air conceptualizing "Eee," the shift creates tension. This results in a loss of relaxation in one's breath, and a corresponding drop in tone quality.

Exhalation

Once all of that air is properly inhaled, half of the mission is complete. It is equally important to know what to do with the air. Exhalation is achieved by simply relaxing and pushing the air out from the diaphragm. This action allows the muscles to return to their normal positions.[76] A relaxed exhalation is similar to sighing, but in this case, the air is sent through a focused airstream. To achieve a good sound while exhaling, it is imperative to keep a constant flow of air moving while thinking of the sound "Ahh."

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[73] Ibid.

[74] David Hickman, *Trumpet Pedagogy; A Compendium of Modern Teaching Techniques* (Hickman Music Editions, 2006), 183.

[75] David Vining, *The Breathing Book* (Mountain Peak Music, 2009), 15.

[76] David Hickman, *Trumpet Pedagogy; A Compendium of Modern Teaching Techniques* (Hickman Music Editions, 2006), 184.

This is similar to the concept of blowing a ping-pong ball up a ramp. In order to keep the ball moving in an upward direction, a steady, focused stream of air is required.

Compression

Compression is used to pressurize the airstream to capacity so that higher pitches and brighter sounds are produced. Some of the most common styles of music that utilize compression while playing are commercial, rock, Latin, and big band jazz. When playing in the upper register, the two most important items to remember are compression and speed of air. Without a high degree of fast moving air and compression, it is extremely difficult to play in the upper register. The common misunderstanding of young performers is that upper-register playing requires a lot of air. Actually, upper-register playing demands less air, but the air must move at a faster rate. Compression occurs when a player squeezes down on the abdominal muscles while exhaling. This duality creates compressed air. A good analogy involves thinking of a garden hose with water coming out of it. When untouched, the water flows freely. This is similar to the movement of uncompressed air. When a person puts a finger on top of the place where water is coming out, the water exits at a faster, more intense rate. This is similar to the passage of compressed air.

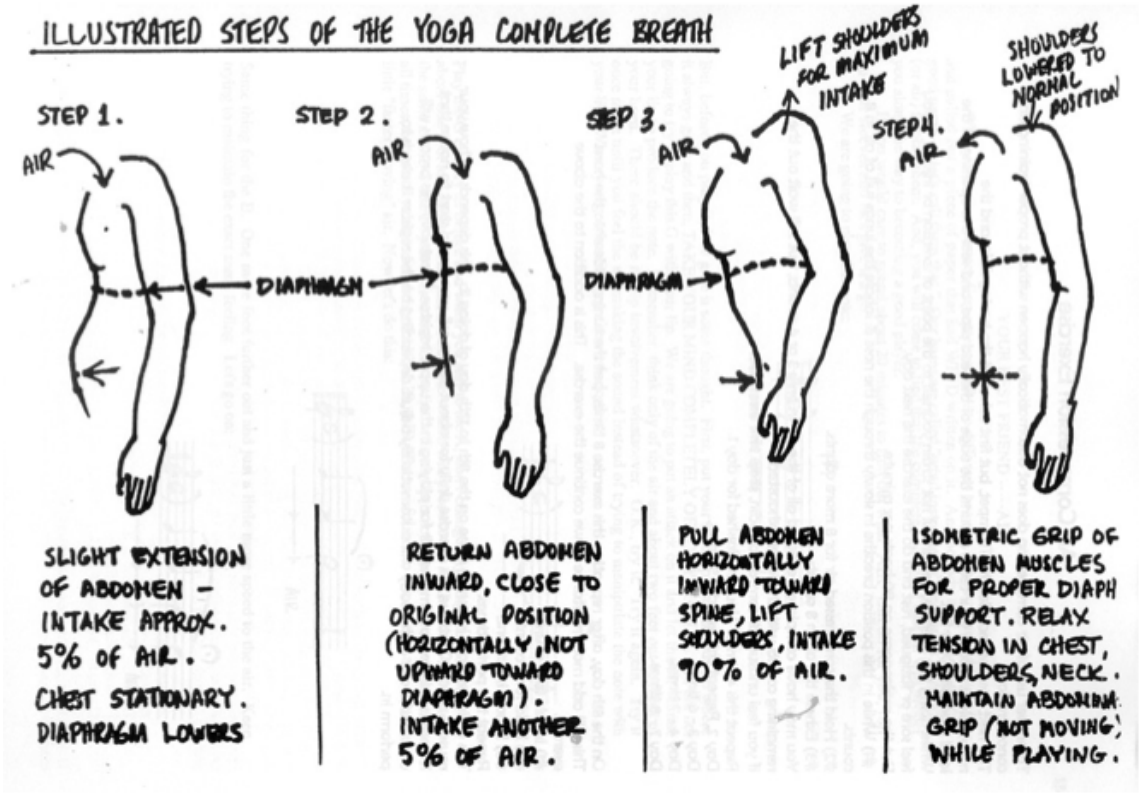
The "Yoga Breath" or "Wedge Breath"

One of the most famous methods of breathing for upper-register playing is the "Yoga" or the more commonly called "Wedge" breath. As discussed in Roger Ingram's book, this type of breathing was first discovered in a work from 1903 entitled, *Science of*

Breath: A complete manual of the Oriental Breathing Philosophy of Physical, Mental, Psychic and Spiritual Development by Yogi Ramacharaka. This system of breathing was and is used by famous upper-register players like Maynard Ferguson, Roger Ingram, and Bobby Shew. Bobby Shew has published a book describing the application of this technique called *Basic Study Guide for Trumpet*. Over the years, the aforementioned artists have modified the breath in an effort to achieve greater efficiency in the upper register. Since no two people have the same stature, it is important for players to find out what works for them and adjust accordingly. The basic principle of the breath involves tucking in the stomach at the naval and visualizing a "wedge" pushing into the abdomen at the navel.[77] This creates leverage for the exhalation of air, thus creating extreme compression. If done correctly, this practice makes it more efficient to play in the upper register for longer periods of time. The method is comparable to launching a spitball through a straw as opposed to a hose. It is necessary to create resistance so that the compressed air can travel at a faster rate. Example 6.0 is Bobby Shew's Illustrated Steps of the Yoga Complete Breath.

[77] Roger Ingram, *Clinical Notes on Trumpet Playing; (Or, "What I did during my summer vacation. . .")* (One Too Tree Publishing, 2008), 97.

Example 6.0 Illustrated Steps of the Yoga Complete Breath[78]



Professional Analysis

Since breathing methods are particularly important for upper-register playing, professionals were asked two questions concerning this issue. Question one inquired about the breathing philosophy embraced for upper-register proficiency. The second item was twofold and asked the respondent to reveal how air compression affects upper-register execution. It also invited the professional to address whether or not upper-register playing can be achieved with and without compressed air.

[78] 2011; available [on-line] from www.bandsourceproductions.com/Audio/YogaBreath.pdf

First, the majority of subjects stated that breathing and air are the most important components of *all* trumpet playing. Additionally, staying relaxed while breathing prevents unnecessary tension. Greg Gisbert replies,

> I look for a feeling where the note is resonating in my chest cavity and my chops, and I let out a little bit at a time. The air is trying to get out of my chest so I don't want to force it out. I want to let it out.

Tony Plog agrees,

> I would say that it is much more important to concentrate on air rather than brute force, and in the upper register the air should be faster (once I mentioned to Al Vizzutti that I would love to have his high register and he said, "it's no big deal, just faster air.")

Good posture precedes good breathing, as it accompanies relaxation. In fact, a player can cause damage by over-breathing, being tense, and having poor posture. Since correct respiration is at the top of a musician's priority list, whether or not upper-register proficiency is an intended target, breathing simply must be practiced. Without an established breath on the inhale and the exhale, a trumpeter may not achieve mastery of this domain. Jon Faddis remembers, "Dizzy used to say that breathing begins in one's rectum (asshole) and that one should clench one's butt cheeks together before playing."

In reference to question two regarding compression, all subjects unanimously stated that this ingredient is a necessity when involving the upper register. Additionally, the majority of respondents felt that reaching notes in the upper register without compression would most heavily impact the timbre of sound. Compression also helps with endurance and volume, and it is imperative that players compress the air but not it through the trumpet. The compulsory amount is determined by the extent of the range and the degree of musical demand. For instance, a G above high C will use less

compression than a double high C. In order to stay relaxed, a player should work on building tolerance for the quantity required.

As previously discussed in this chapter, one of the most efficient ways to achieve compression is with the "wedge" or "yoga" breath. For the most part, Bobby Shew is credited in teaching this breath. Bobby Shew credits Maynard Ferguson for showing him the book *Science of Breath: A complete manual of the Oriental Breathing Philosophy of Physical, Mental, Psychic and Spiritual Development*, and Bud Brisbois, who demonstrated how it worked via his mastery teaching. Bud Brisbois is also credited in teaching Roger Ingram, another proponent of the "wedge" breath. Roger attests,

> The great Bud Brisbois once conveyed to me during a lesson I had with him when I was 16, "Roger, when I play a high C, I use, let's say, a tablespoon full of air. When I play a high G, I use a half tablespoon of air. When I play a double high C, I use a teaspoon full of air. When I play a G above double high C, I use a half teaspoon full of air." After Bud told me this, I asked him the obvious question: "Then why does it look like everyone is working harder and harder as they ascend into the upper register?" Bud simply answered, "Well, if they are playing correctly, their body is working harder to create the needed compression to move a smaller volume of air faster."

It is important to conceptually separate the speed of air from the volume of air. In order to increase air speed, a player needs to magnify compression. Roger exemplifies this by stating,

> …to sustain a middle C for 10 seconds would require twice the air volume than to sustain a high G (above high C) for 10 seconds. However, the amount of compression needed to create the air speed for that G would be twice as much as the compression required for the middle C.

Compression is clearly one of the key elements for success in the upper register. The majority of subjects express that a player's ability to use an efficient method of breathing

is of tremendous importance. Bobby Shew warns, “Whatever method of breathing a person has been taught and more importantly, chosen to use, it cannot be taken lightly.”

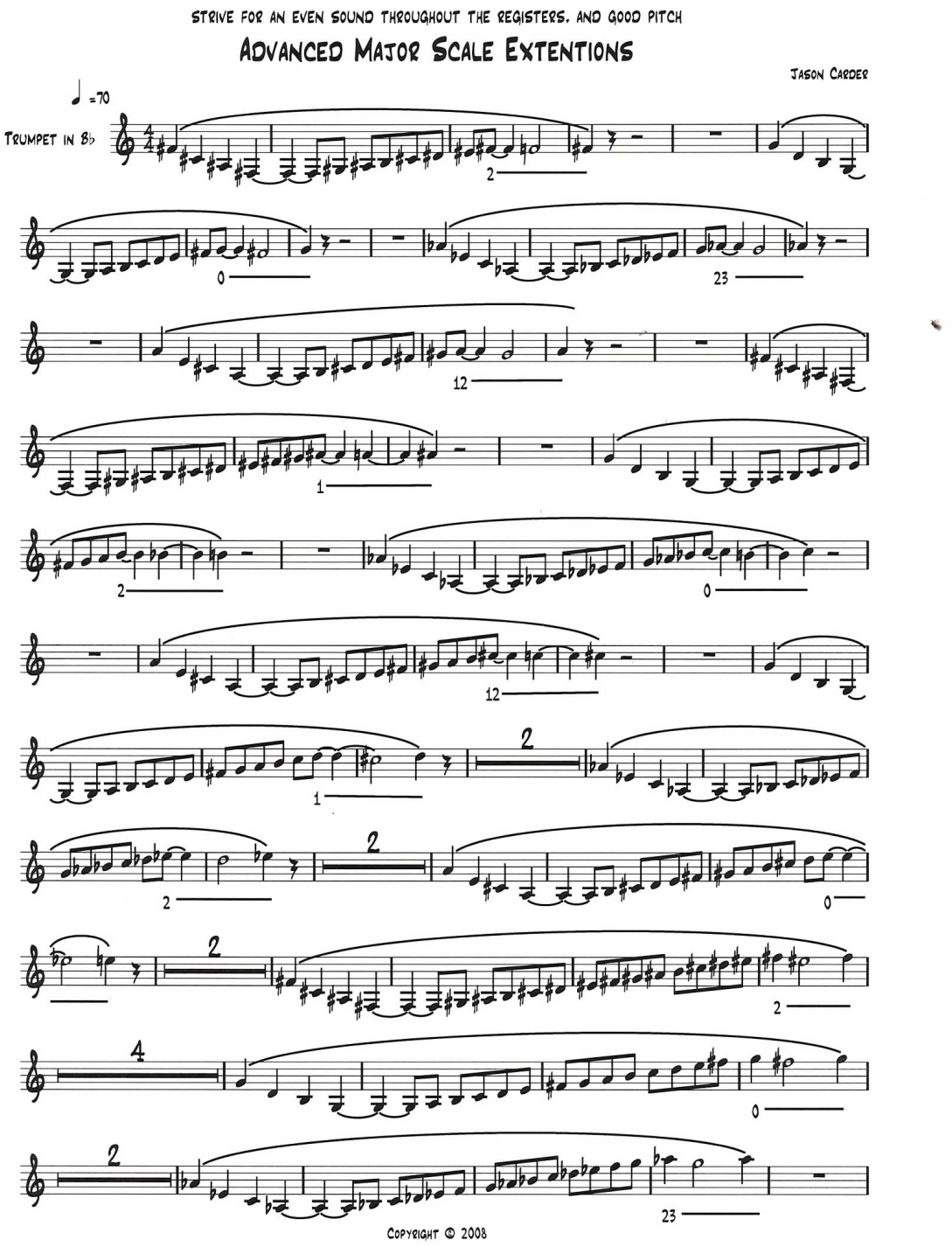
CHAPTER SEVEN

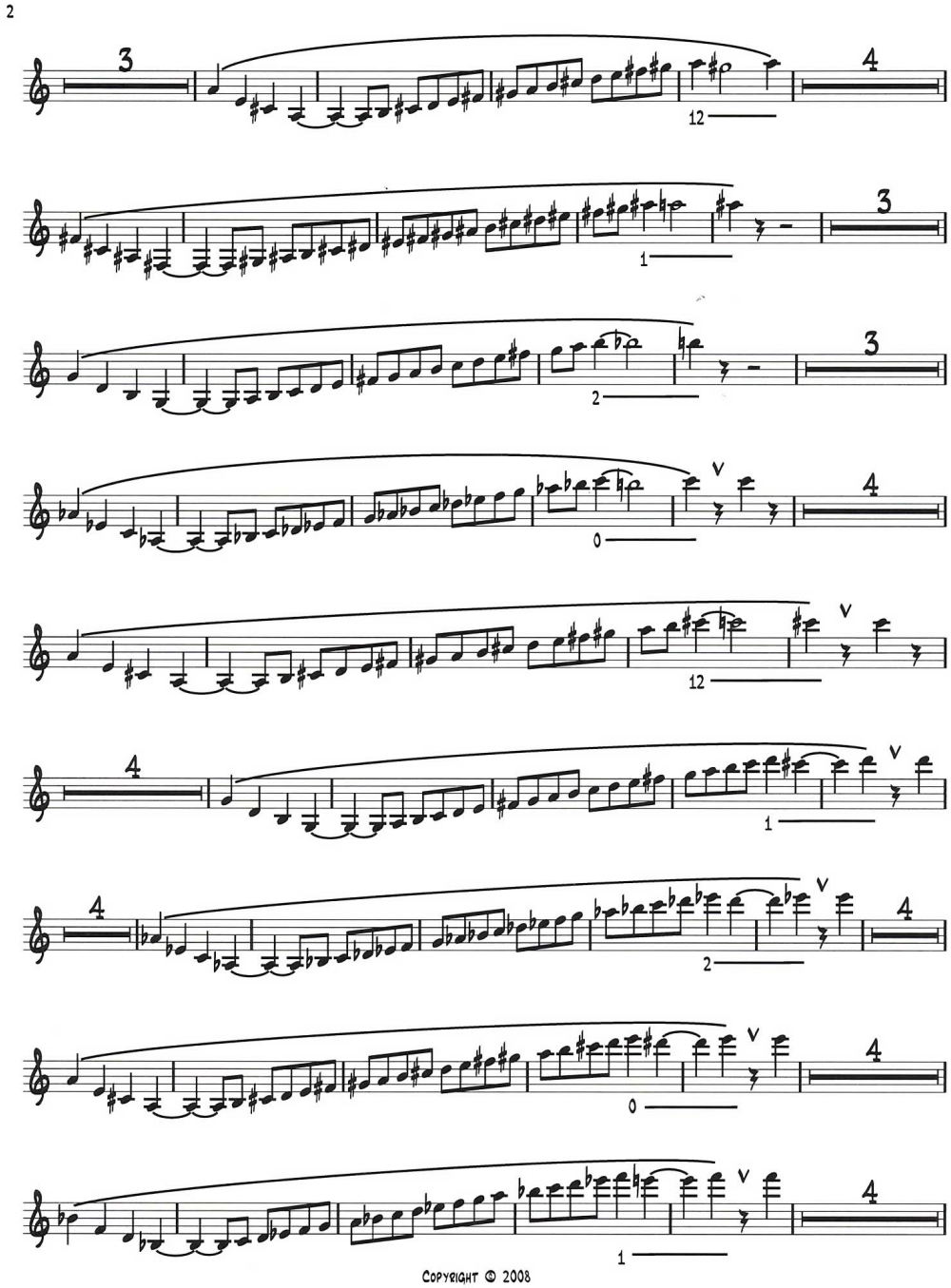
PRACTICE REGIMEN

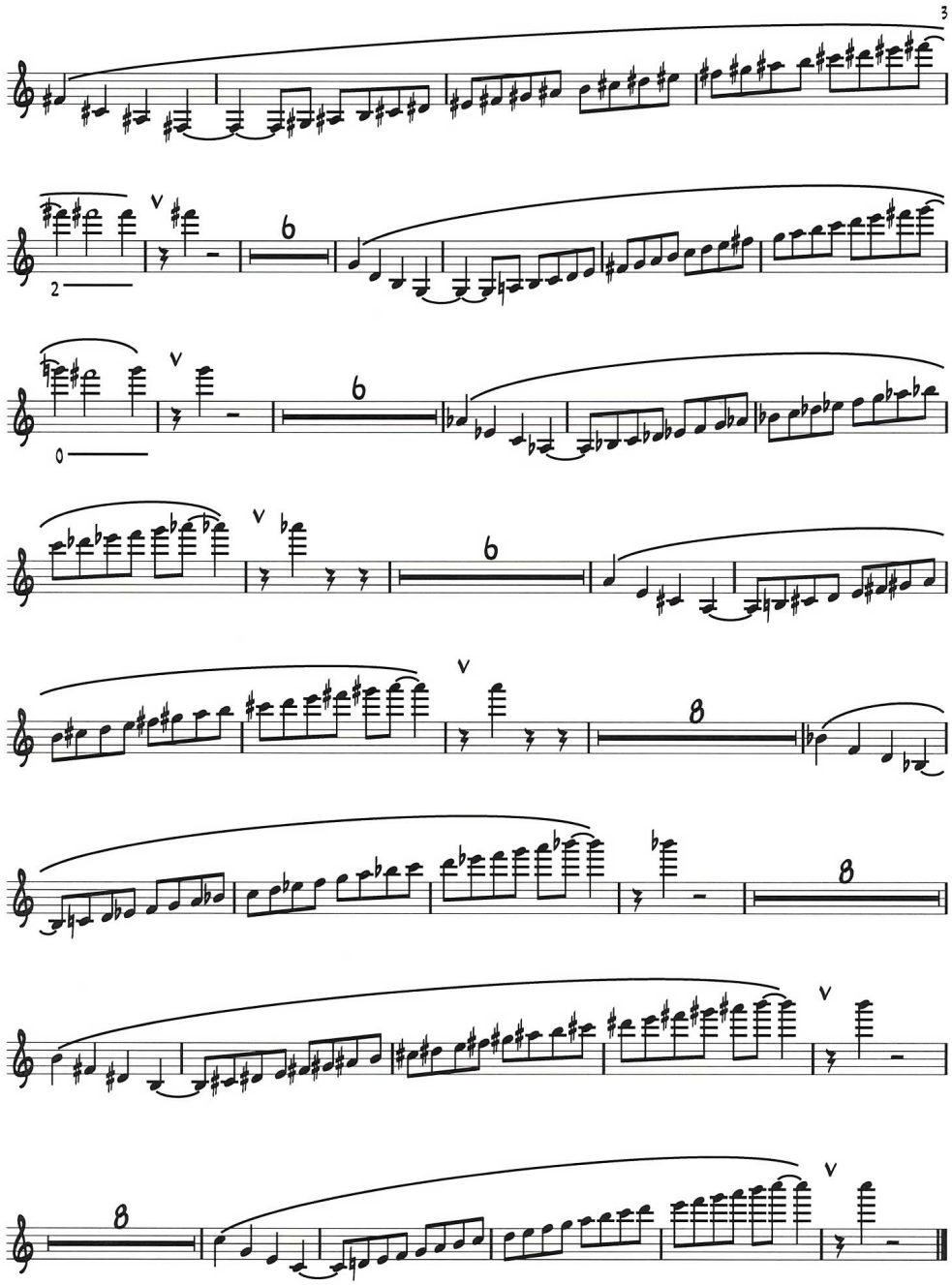
Nathaniel Mayfield states, “My teacher Ray Mase always said: If you want to get better at baseball, practice baseball! In that sense, if you want a good high register, practice up there!!” This chapter will include specific trumpet routines that will help increase a player’s range. However, it should be noted that a musician needs to be fully warmed up before approaching these exercises. Also, if a player feels strain during any of the proposed exercises, he or she should refrain from forcing another attempt. The majority of these suggestions are taken from the questionnaires submitted by highly regarded professionals in the field who have strong and well-developed upper-register technique. These exercises should not be played together and are prescribed as separate entities.

Trumpet player Jason Carder submitted example 7.0: Advanced Major Scale Extensions. The purpose of this exercise is to develop and extend a player’s upper register while working from low range to high. A performer should strive for an even sound throughout the registers while still maintaining good pitch. The intent of the lip bend at the end of each phrase is to strengthen corners and to learn how to manipulate the trumpet in all registers. Carder advises that this exercise should be played in strict time, counting all rests as is, with a metronome where the quarter note equals 70 beats per minute (bpm).

Example 7.0 Advanced Major Scale Extensions

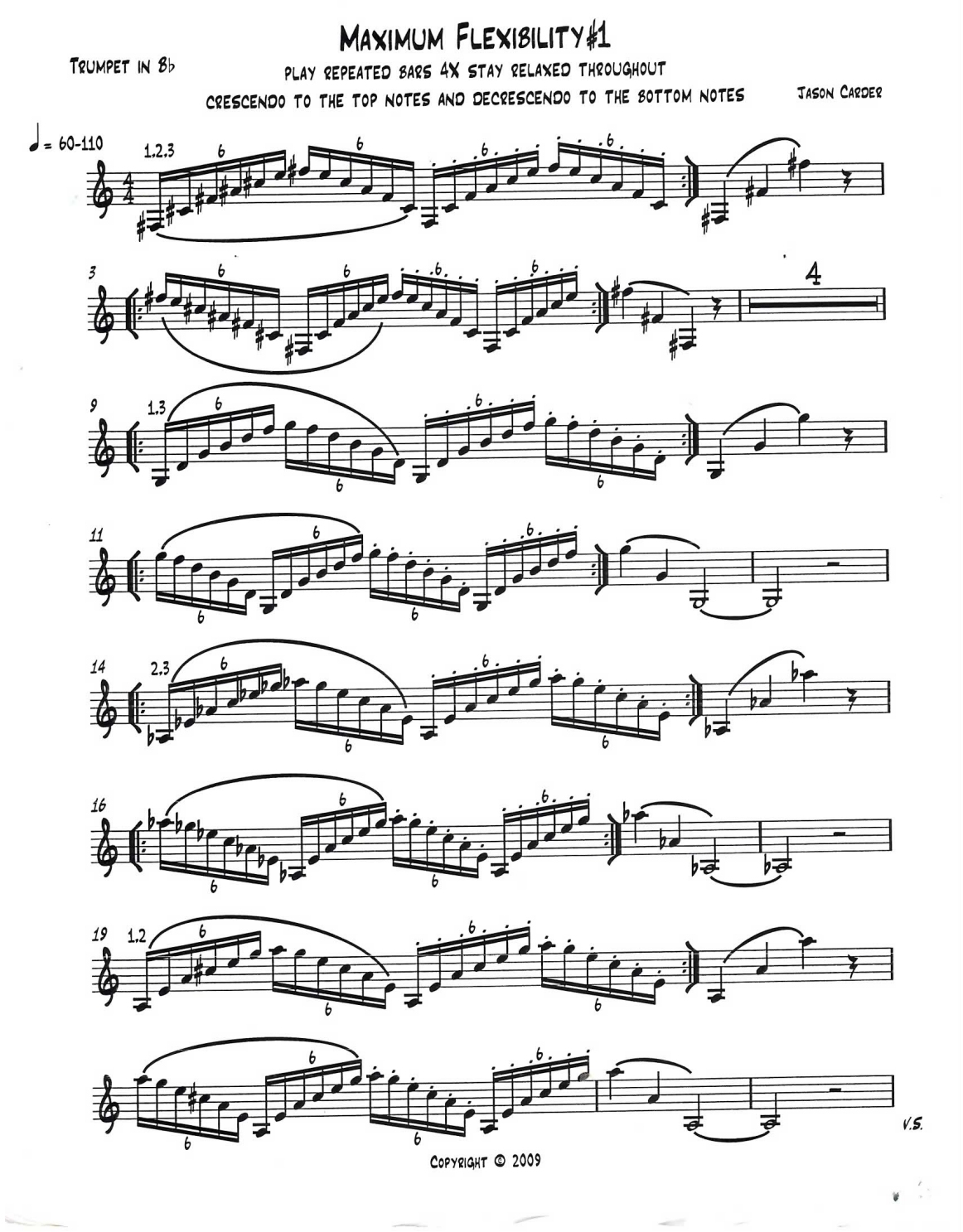


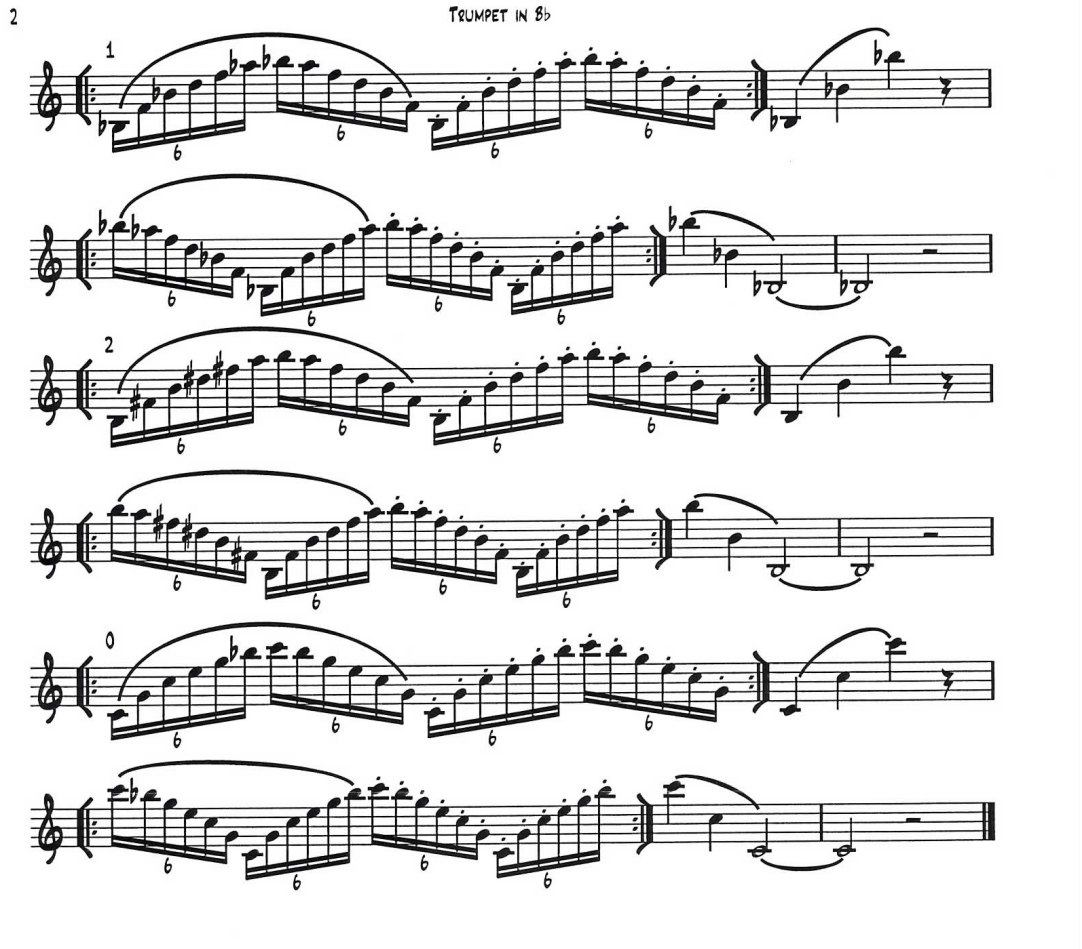




Jason Carder also submitted Example 7.1: Maximum Flexibility. The aim for this maneuver is to increase flexibility while starting once again from low to high. The musician must play the repeated bars four times while maintaining relaxation. Intended is a crescendo to the top notes and a subsequent decrescendo to the bottom notes. The exercise should be performed in strict time from beginning to end, and the quarter note can vary from 60 to 110 bpm. If a player desires, he or she can even extend the range of this exercise beyond what is written.

Example 7.1 Maximum Flexibility





The next series of exercises are all materials Jon Faddis practices. Jon Faddis via e-mail suggests,

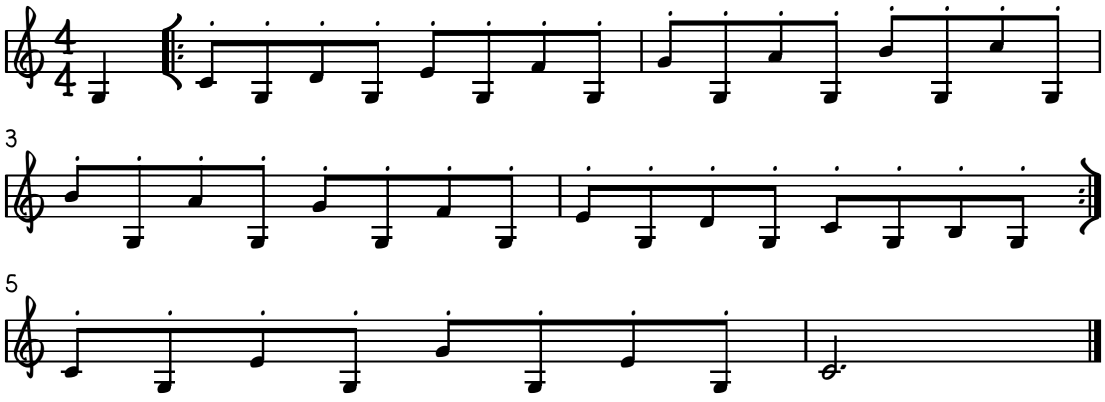
> I practice the first page of Herbert L. Clarke's Technical Studies up to Double C, but softly…no crescendo.
>
> I practice my own variations on Carmine Caruso's six notes. If I have time, I practice Arban's page 125, 126 and 127 up to Double C for accuracy.
>
> Most of the upper register practice that I do now is done pianissimo. Still trying to make playing the trumpet as easy as possible.

Example 7.2 Herbert L. Clarke Technical Study One

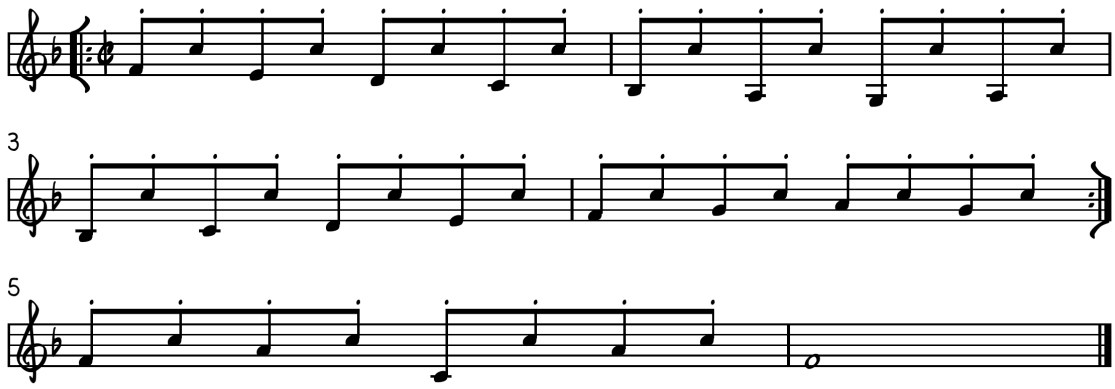
The player should repeat the phrase as notated eight to sixteen times, depending on the tempo. Notably, Mr. Faddis does not play this exercise with a crescendo, thereby diverging from the original Clarke Study. Example 7.2 can be transposed in half steps all the way up to double C. If completed with integrity, this protocol should increase flexibility.

The next three examples hail from what is known as the "Trumpet Bible," the *Arban* book. Each of the following exercises is a variation of the one preceding it. A player should transpose the selections to the extent of his or her range, with the goal being double C. These practices are intended to increase accuracy in all ranges.

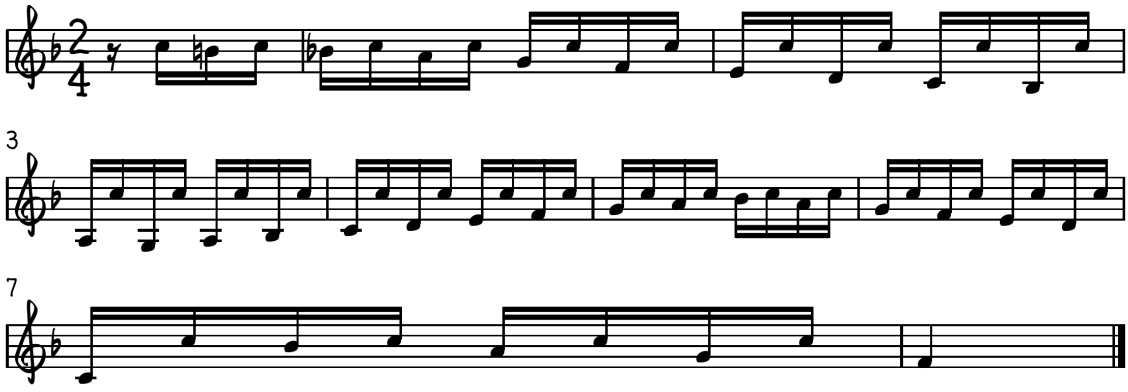
Example 7.3 Arban's Interval Study



Example 7.4 Arban's Interval Study Variation #1

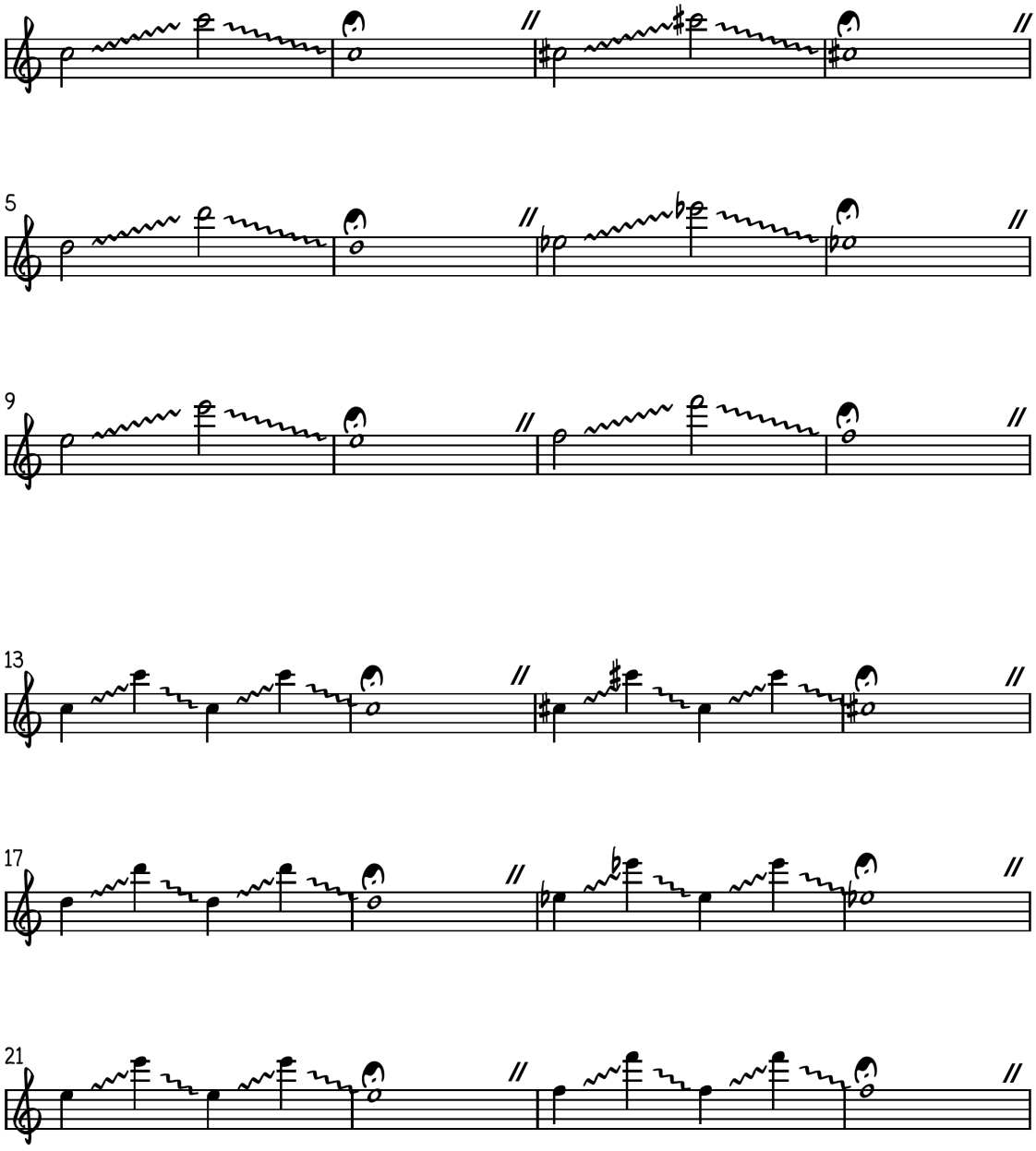


Example 7.5 Arban's Interval Study Variation #2



The next exercise was the most commonly recommended amongst the questionnaires. Across the spectrum of professional trumpet players, octave glissandos were a recurring theme. Bobby Shew recalls,

> Through my time with Bud Brisbois, he showed me that doing glissandos through the partials and clicking on each slot as I ascended, enabled me to get a feeling of ascending without overblowing. As I became more familiar with it, I was able to change to aperture and therefore the dynamics. This resulted in my pretty quickly being able to ascend all the way to Double C without exaggerated pressure and pinching in the lip area. I still use it as a primary means of keeping my chops in shape without having to do excessive practice regimens.
> Example 7.6 Octave Glissandos

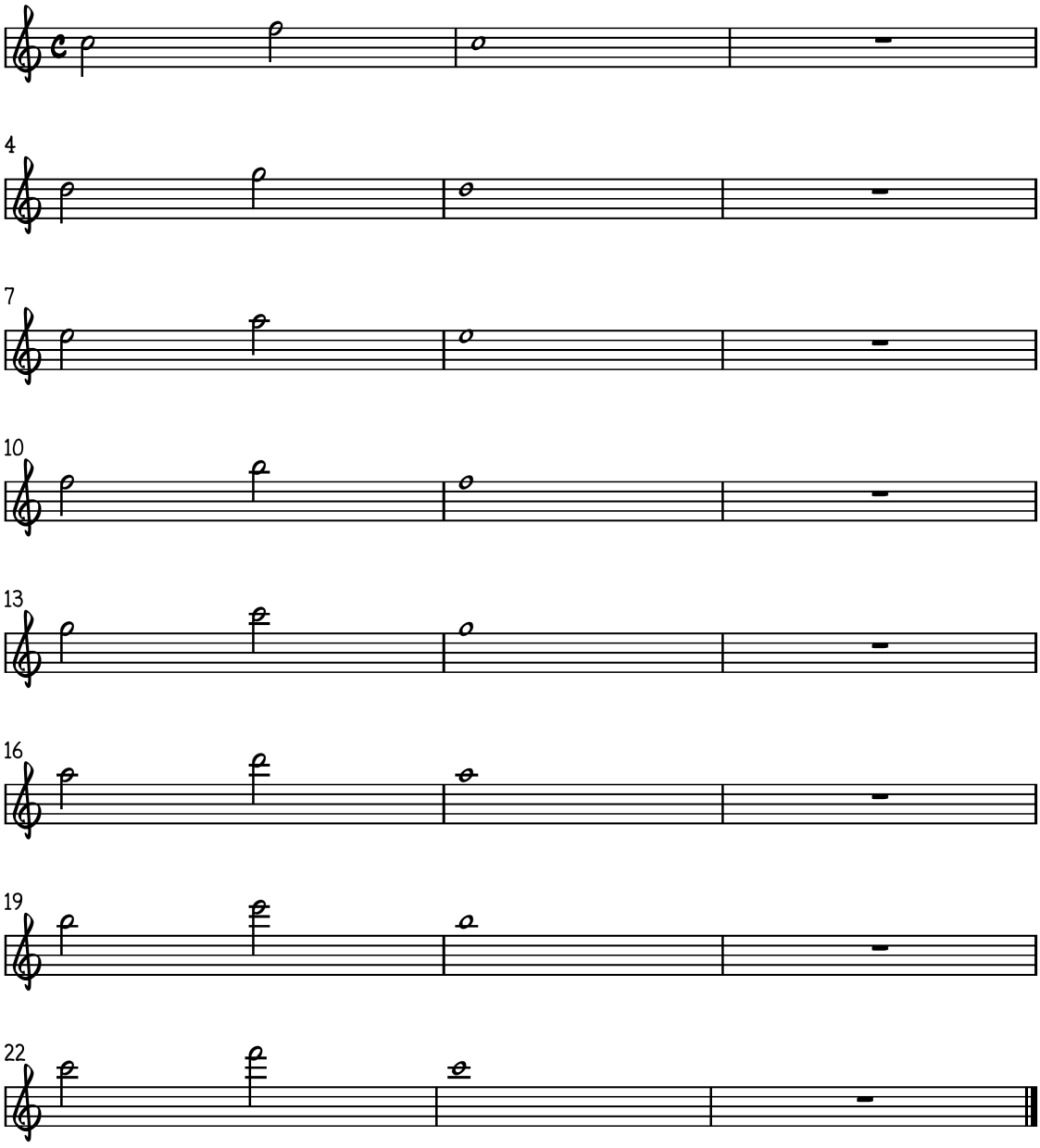


The purpose of this exercise is to increase flexibility while creating muscle memory regarding note slots.

Trumpet player Rashawn Ross has submitted the following exercise. Rashawn holds a trumpet position for the Dave Mathews Band and is a self-taught player. The subsequent exercise consists of executing an ascending “C” scale in intervals (2nds, 3rds,

4ths, 5ths, 6ths, and 7ths) up to the highest achievable note. This must be attempted without taking the horn off the lips. During this endeavor, a player should breathe through the nose and rest for one measure before advancing to the next scale tone. Mr. Ross expresses that he spends about one week on each interval. The purpose of this exercise is to build strength and endurance in the corners by not removing the trumpet from the lips. If done appropriately, it will also maximize accuracy and control.

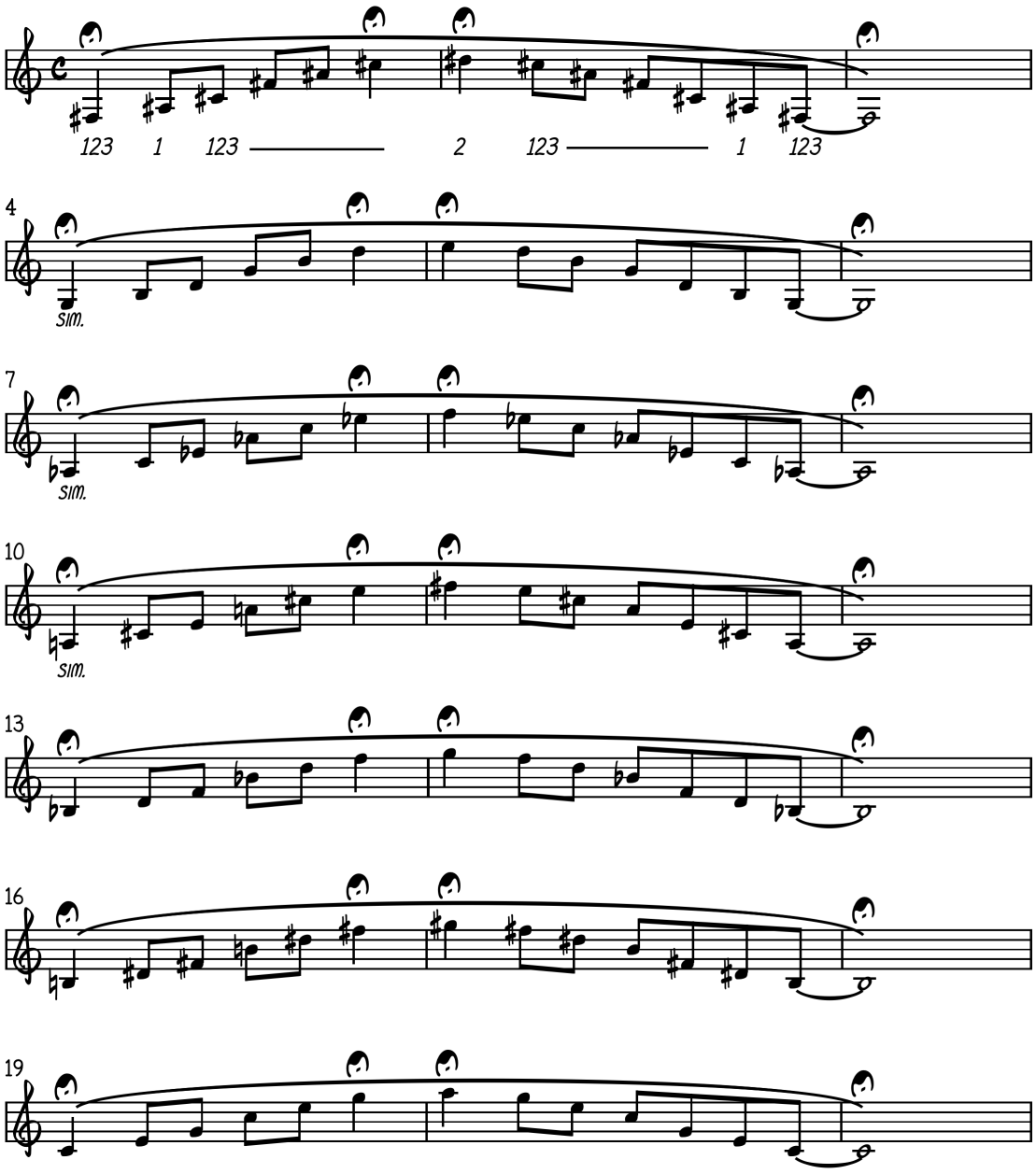
Example 7.7 Ascending “C” scale in 4ths



Along the same lines of an expanding scale exercise, the following example involves expanding a major arpeggio. Submitted by Rob Parton, this protocol should be done freely, but with only one breath. It is critical to remember that false fingerings should be used for the first portion of this exercise. The purpose of this technique is to

augment flexibility. A player should feel free to extend the range of this exercise to his or her desire and should also rest between phrases.

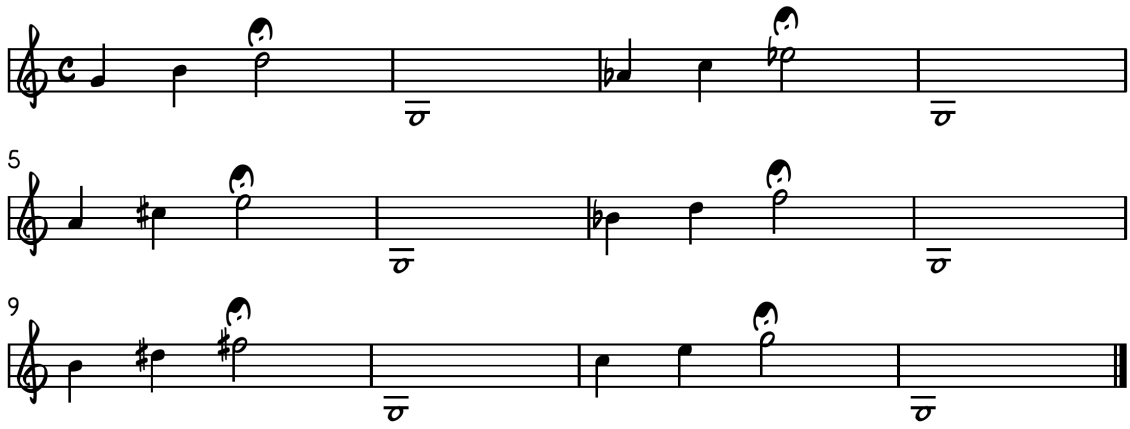
Example 7.8 Expanding Major Arpeggios



The last practical recommendation entails an expanding major triad exercise. In this procedure, all players must play a low G without removing the trumpet from the lips

after every major triad. Playing the low G brings the aperture back into focus. A breath attack must be utilized on the low G, rather than a hard articulation with the tongue. The purpose of this exercise is to build strength and endurance while simultaneosly increasing a performer's range. It is essential for a player to go as high as possible without brunt force.

Example 7.9 Expanding Major Triads



With each of these routines, strain is the musician's greatest enemy. Tage Larson advocates, "Trying to maintain a good balance between good support, good air compression and relaxation are the keys to achieving a solid high range. It is important to remember that to build a consistent high range daily, methodical practice is essential". A wise Bobby Shew refers to Ralph Waldo Emerson:

> As to methods, there may be a million and then some, but principles are few. The man who grasps principles can successfully select his own methods. The man who tries methods, ignoring principles, is sure to have trouble.

Bobby Shew quotes:

> A player cannot deny or eliminate the fundamentals of wind instrument playing and expect to reach any acceptable level of competence. Age-old methodologies are in need of serious reassessment, and future decisions in a technologically advanced world must also be subjected to a filter of principles.

CHAPTER EIGHT

CONCLUSION

A large body of evidence suggests that playing trumpet in the upper register is a true art, but the considerations of equipment, physicality, psychology, breathing, and daily practice all play a major role in a performer's success. Fortunately, research evidence supports the notion that achieving upper-register success is a goal that can be attained by musicians of any physical stature. The mental obligation of control rests solely within the individual.

Like professional athletes, trumpet players differ with regard to the choices of their equipment. A performer must try many mouthpieces, horns, and combinations to uncover what works best. In most cases, the demands of a player will change over time, and the quest for optimal equipment will not have a finite destination. No two people carry the same construction, thus success is not completely prescriptive. Maynard Ferguson quotes, "One man's sugar is another man's poison." It is important for a trumpet player to trust both colleagues and teachers and constantly research available equipment choices. A musician chasing a high note with equipment is steering toward musical failure.

Proper breathing is typically the aspect of upper-register playing that delivers the most success. Critical to all aspects of performance, its contributions to upper-register success should not be underestimated. If a player is not breathing correctly, upper-register facility is simply unattainable. Compression is an important ingredient in

achieving the right sound, endurance, and overall stamina. Though compression can be attained in many ways, the most efficient, most advocated path is via the "yoga" or "wedge" breath.

Daily practice is essential for reaching any type of musical success. It is critical for a player to find a good balance within the daily routine. Practicing solely to extend range or staying only in the upper register will most likely damage a player's sound and technique in the mid to low registers.

Once a player is able to achieve upper-register range consistently, only half of the battle has been won. To quote the movie *Spiderman*, "With great power comes great responsibility." Since the upper-register aspect of trumpet playing generally leads the band, orchestra, or ensemble, it is a player's obligation to perform tastefully, implement good time, demonstrate superior intonation, and achieve the ultimate objective– musicality. The ability to play in the upper register is certainly not equivalent to the completion of a project. Rather, it is a tool that must be developed, nurtured, and sharpened so that beautiful music can be made. As Trummy Young sang with Jimmy Lunceford's Orchestra, "It ain't what'cha do, it's the way that'cha do it!"

Personal Reflection

I have been very fortunate to have had a successful career thus far, and most of my achievements can be linked with an ability to be able to play musically and consistently in the upper register. Therefore, when I first started off on the venture of this doctoral essay, it would have been easy to assume that the only compass needed would be my experience. Instead, I discovered that I didn't know as much about the trumpet as I

previously thought. I have been called a "natural" player in the upper register because I have never focused on my equipment, embouchure, or competence in this area. I will address each of my chapters in regards to equipment, mental versus physical abilities, breathing, and the practice regimen.

When I first discovered my ability to play in the upper register, I was playing a Bach 3C mouthpiece and a Bach Stradivarius model 37 lightweight trumpet. It was not until I went to college and studied with Rob Parton that I truly started to develop my proficiency in this area. In my last year, I studied with Roger Ingram who competently taught me the wedge breath and brought my upper register to the next level. Rob gave me an immediate equipment change. He also informed me that if I wanted to play in the upper register and last an entire gig, my 3C was not going to cut it. Formerly, I was a big advocate of consistency with equipment. However, I trusted Rob and switched to a much shallower mouthpiece as well as a Los Angeles Benge MLP. The impact on my upper register playing was quite dramatic.

Since that time, I have explored several mouthpieces. Ultimately, I found a mouthpiece that makes me happy, and I believe it serves as a commercial mouthpiece. I worked with Karl Hammond and designed the Augie Haas model mouthpiece. The rim is semi-round, 28 throat, and the diameter is equivalent to a Bach 5C. I am able to get an even sound throughout all registers and play up to and above double high C. As all the participants commented on finding optimal equipment, a performer needs the right tool for the job. I agree with their consensus!

Regarding the importance of mental and physical playing, I think that upper register capability is 80% mental and 20% physical. It was not until I was writing my

thesis that I actually considered this comparison. There are many different variables related to the physical side of trumpet playing, but the mental component controls the physical. More often than not, if a player does not think he or she will ever be able to play in the upper register, this prophecy will be fulfilled. There are great players who are skinny or over-weight, and others with an overbite, underbite, or crooked teeth. Some successful trumpeters have thick lips, and others have thin lips. The bottom line is that a person can train the body to do a lot of things, and upper register playing is no exception. I find that most struggling players seeking the ability to play in the upper register are those that think there is a substitute for time and consistency, such as a special high note mouthpiece.

In my judgment, proper breathing is absolutely the most important precursor to upper register playing. I was a good upper register player in college before studying with Roger Ingram. When he showed me how to do the wedge breath, my ability increased exponentially. In my opinion, the wedge breath is the most efficient way to play with compression in the upper register, and without it, endurance is compromised.

The biggest problem I find in upper register players today, particularly those that are younger, is that they put all of their energy into this one facet of performance. No player makes a living on upper register competency alone. All of the greatest high note musicians were outstanding trumpet players who could also play in the upper register. To have a chance of making it as a trumpet player, versatility is the key. However, I also believe that every musician should try and have a specialty which sets him or her apart, while still maintaining a high level of proficiency in the other aspects of performance. Clearly, there is not one right way to be a successful upper register player. Many people

may look upon reaching the same double high C, but they must each view it through a lens which allows their own proportions, strengths, and beliefs to shine through.

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APPENDIX A

INITIAL INTERVIEW QUESTIONS

1. Identifying Optimal Equipment
    a. What equipment do you use for upper register playing and why?
    b. What is the effect of the proper equipment on upper register?
    c. How does a player go about finding optimal equipment?

2. Psychological versus Physiological Implications:
    a. In your opinion, approximately what percentage of high note playing is mental vs. physical?
    b. Is upper register playing a learned trait or is it based on natural ability?

3. Breathing and Compression:
    a. What is your philosophy on breathing concerning the upper register?
    b. How does air compression effect upper register playing and should a player be able to execute upper register playing both with and without compressed air?

4. Practice Regimen:
    a. How and what do you practice to be able to play consistently in the upper register?

5. Additional Comments:
    a. Please provide any additional comments you feel would be helpful in advancing the knowledge of upper register playing?

APPENDIX B

INFORMED CONSENT FORM

THE ART OF PLAYING TRUMPET IN THE UPPER REGISTER

INFORMED CONSENT FORM

PURPOSE:

The goal of this research is to provide a comprehensive, accessible analysis of how to maximize upper-register playing. Based on the writer's professional experience as well as research, it is hoped that this practical reflection will benefit all trumpet players enabling them to achieve notes in the upper register with far less effort.

PROCEDURE:

The informed consent and the questionnaire will be attached to an email (recruitment letter) and sent out to the participants. All participants are asked to answer this series of questions (see end of document) regarding a critical analysis and discussion on upper-register playing.

The participants will be asked to state in their email response whether they agree that their names will be published or not. Each participant acknowledges through his/her responses to the questionnaire (via email) that he/she has read and understood the informed consent form and further agrees to its terms. The responses will be used for research and will be included in the co-investigator's doctoral essay. Through responding to the questionnaire and editing it as the participant wishes it to appear in the document, each participant also agrees that his/her responses will be published in the essay.

RISKS:

No foreseeable risks or discomfort are anticipated for you by participating. Because this research is being conducted through email, security of your correspondence cannot be guaranteed.

BENEFITS:

Although, no benefits can be promised to you by participating in this study, the information gathered and distributed later is intended to be used to provide a comprehensive, accessible analysis of how to maximize upper-register playing.

ALTERNATIVES:

You have the alternative to not participate in this study. You may stop participating any time or you can skip any questions you prefer not to answer.

COSTS:

No costs are anticipated for you to participate in this study.

PAYMENT TO PARTICIPATE:

No monetary payment will be awarded due to participation in this study.

CONFIDENTIALITY:

The participants' names and responses will be made public in my DMA paper, which will be submitted to the faculty of the University of Miami this May 2011, and will be available for educational purposes unless he/she indicates to the August Haas that they would like their information to be kept confidential. Please state your preference in your email response on whether you want your name to be published or not.

RIGHT TO WITHDRAW:

Your participation is voluntary; you have the right to withdraw from the interview process.

OTHER PERTINENT INFORMATION:

The researcher will answer any questions you may have regarding the study and will give you a copy of the consent form after you have signed it. If you have any questions about the study please contact August Haas at (414)-628-0408 or augusthaas@gmail.com or Dr. Rachel Lebon at (305)-479-0272 and RLLebon@aol.com Please print a copy of this consent document for your records.

APPENDIX C

PARTICIPANT QUESTIONNAIRE TRANSCRIPTS

ROGER INGRAM – INTERVIEW
Via E-mail – February 11, 2011

1. **Identifying Optimal Equipment**

   a. **What equipment do you use for upper register playing and why?**

   When I decide to play in the upper register on the trumpet, I use a Bb trumpet and a trumpet mouthpiece. Within the huge variety of Bb trumpets on the market today to choose from, I prefer a medium bored trumpet. Specifically, my choice of medium bored trumpet is the Jupiter XO Series 1600I which I designed for the Jupiter Band Instrument Company. This horn has a .453 uniform bore. "Uniform" meaning the same bore size throughout the instrument: after the lead pipe and up to the bell flare. This is as opposed to a "step bore" trumpet, which is comprised of 2 (or more) different bore sizes within the same parameters (between the lead pipe and the bell flare.) Because the bore classification of a Bb trumpet is determined by the bore size of the valve section, it is possible to have either a uniform bore or a step-bore design within the confines of what is considered "medium bore."

   Personally, I prefer a horn assembled within the parameters of what would be considered "standard bracing" as opposed to a "tunable bell" trumpet. I feel that the tensile strength rigidity of a standard braced horn helps to move the sound in a forward motion as opposed to the more peripheral sound direction that the tunable bell yields.

   I prefer a medium bored trumpet as opposed to what would be considered a large bore or medium-large bored horn. This is because a medium bore offers the proper amount of resistance required for ease of access to the upper register of the instrument. Originally, large bore and medium-large bore trumpets were designed specifically for symphonic or orchestral work. The occurrence of playing in the upper register within those genres is minimal when compared to what is required of the "commercial" player. A commercial trumpet player is required to play a wide variety of musical styles, i.e., big band, rock, funk, latin, show-work, as well as specific

upper register playing. Because I earn my living as a commercial musician, "I always default to medium." This gives one a "place to go" regarding degree of versatility.

b. What is the effect of the proper equipment on upper register?

Well, using the "proper equipment" for a specific type of playing would of course produce good results. Acceptable results are attainable for accessing the upper register when using "improper equipment," but why make it hard on yourself? The very reason there is such a huge variety of equipment available for a trumpet player to choose from is to make playing as easy as possible for specific types of work. For instance, if I were asked to do work with a symphony, or in another classical setting, I would use a larger mouthpiece and a trumpet with a medium-large or large bore. This would make blending with that type of musical configuration "easier." Playing a medium-large or large bored trumpet for commercial or upper register work and conversely using a medium bored trumpet for orchestral work merely for "the sake of doing it" makes absolutely no sense.

c. How does a player go about finding optimal equipment?

The answer to this is one simple word: EXPERIMENTATION. There are hundreds of different Bb trumpets and thousands of different Bb trumpet mouthpieces on the market today. Within the parameters of using specific bore sizes for different types of work, a trumpet player has many different brands and bore configurations to choose from. Time and energy must be taken for this consideration: all the while remembering (once again) that the bore classification of a trumpet is determined by the bore at the valve section. Not all medium bored horns play the same and not all medium-large and large bored horns blow the same or offer the same degree of resistance. Many people do not know how to test a trumpet.

I've discussed this matter at length with Bobby Shew; here are HIS suggestions from that correspondence on how to test a trumpet. I concur, thus my inclusion of his words:

> A VERY important aspect of testing horns is knowing HOW to test. I have a simple suggestion and if it is too much for your current chops, adjust it to fit your capabilities.
>
> 1. Get a simple and decent warm-up but don't overwork your chops. Just get them somewhat working enough to do the test. Use your current horn for this as well as the initial test on step 2.
>
> 2. Using only low C to high C, Arpeggiate the lower octave (C-E-G-C) and then continue upward to high C using the basic C scale (diatonic.) Hold the high C for a few seconds just to check for how much stress your body is using to do

this. Do it 2 more times identically to ensure that you are aware of the body sensations.

3. Select a different trumpet and do the exact same process as in step 2 , 3 times, measuring your body sensations. It can really help if you are able to do these tests with your eyes closed as it helps internalize your awareness of the kinesthetic reactions.

4. If the process on step 3 gives you a sensation of greater ease, the horn goes into the YES category. If the sensation is greater stress, then it's a NO category. Keeping recorded notes on paper might be a help so as to remember over a period of time. If you're not certain of the differences, go back to your primary horn and alternate again. It COULD be that they both might feel very similar. If so, note that on paper.

5. Repeat the process with a different horn and make the categorical decision. Don't rush the process and rest periodically so you don't overtax your chops.

Assuming you have 4 or 5 horns to try, you might find that 2 feel easier than your current one and the others feel harder to play. Eliminate the ones that DON'T make playing easier. Write down the names and models (maybe even serial numbers) of those in each category for further reference. So, EASE OF PLAYING is the primary objective but QUALITY OF SOUND is of equal importance. It's possible to find a horn that seems a lot easier to play high on but the sound might be extremely strident and irritating to your ears. NO ONE should play an instrument that doesn't please their ear! It's a matter of what type of music you will be playing that will be a major determining factor in your ultimate decision.

2. Psychological versus Physiological Implications:

a. In your opinion, approximately what percentage of high note playing is mental vs. physical?

The physical aspect of accessing the upper register includes of course, muscle development, muscle memory, and the coordination of bringing together all the ingredients of the principles of playing mechanics into one cohesive motion. The mind polices all of this motion through muscle memory and repetitive playing actions. I would have to honestly say that the physical aspect of accessing the upper register comprises 15% of this energy. The mental component would of course then be 85%. On a physical level, you could teach a chimpanzee to access the upper register. However, a chimp's mental capacity would be unable to control it.

b. Is upper register playing a learned trait or is it based on natural ability?

It can be either. Personally, I had to figure it out, which is why I am in a very good position to teach it. I know exactly what I am doing and how to convey that to a student. Many people who "fell into it" naturally have no

idea how they do it, or how to teach it. In many ways, this is a liability for them: if and when they run into "chop problems" many of these "natural players" have no idea how to correct chop issues that may have arisen.

3. Breathing and Compression:

a. What is your philosophy on breathing concerning the upper register?

"You can breathe until you are blue in the face, but if you don't create compression it doesn't matter." This is a quote of mine from my textbook, "Clinical Notes on Trumpet Playing." It is well known that I employ, recommend, and teach what is known as the "yoga breath." This breath was originally explained in the 1903 book, "Science of Breath: a complete manual of the oriental breathing philosophy of physical, mental, psychic, and spiritual development" by Yogi Ramacharaka.

To my knowledge, the yoga breath is the most efficient way of physically creating air compression. In a way, when playing a brass instrument, we can think of ourselves as human air compressors. The ability to create compression in an efficient manner is crucial. Applying this breath helps maintain endurance, protects our muscles from possible injury, and creates the necessary compression to ignite the combined actions of the tongue, embouchure, and aperture.

b. How does air compression effect upper register playing

Compression effects upper register playing in that without it, the ability to access the upper register is non-existent.

c. and should a player be able to execute upper register playing both with and without compressed air?

It's not a matter of "should they be able to," it is a question of whether they CAN access the upper register without compression. The answer to that is simply, "NO." Now, air VOLUME is another matter all together. The great Bud Brisbois once conveyed to me during a lesson I had with him when I was 16, "Roger, when I play a high C, I use, let's say, a tablespoon full of air. When I play a high G, I use a half tablespoon of air. When I play a double high C, I use a teaspoon full of air. When I play a G above double high C, I use a half teaspoon full of air." After Bud told me this, I asked him the obvious question: "then why does it look like everyone is working harder and harder as they ascend into the upper register?" Bud simply answered, "well, if they are playing correctly, their body is working harder to create the needed compression to move a smaller volume of air faster."

Please do not mistake air speed for air volume. A brass player needs to increase compression to increase air speed. The amount of air brought into the lungs is determined only by how long a particular phrase or note needs to be sustained. This applies in all registers of the instrument. For example, to sustain a middle C for 10 seconds would require twice the air volume than to sustain a high G (above high C) for 10 seconds. However, the amount of compression needed to create the air speed for that G would be twice as much as the compression required for the middle C. These fractions might not be exact, but the principle is certainly true. This is why many trumpet players become "light-headed" when they perform in the upper register: they do not understand this concept of air volume versus air speed, and consequently are inhaling too much air volume when they attempt to play in the upper register. The amount of air to be used in the upper register is significantly less than what is required for the mid or low registers of the instrument.

4. **Practice Regimen:**

    a. **How and what do you practice to be able to play consistently in the upper register?**

    I never practice in the upper register. When I do get a chance to practice, I mostly play transcribed Lee Morgan, Chet Baker, Clifford Brown, and Blue Mitchell solos with my large mouthpiece - to keep my corners strong. Muscle memory to access the upper register was imprinted in me a long time ago. It's like riding a bike. After you learn how to ride a bike, you can go for years without riding one, and then hop right back on, and you'll be able to ride it. When I am asked to play in the upper register, I simply assemble my upper register mouthpiece with the trumpet, and it's there. The biggest challenge is keeping the corners of the embouchure strong. The best way I have found to do this is by playing be-bop.

5. **Additional Comments:**

    a. **Please provide any additional comments you feel would be helpful in advancing the knowledge of upper register playing?**

    Obviously, there is not a lot of attention given to playing music when concentrating purely on physics and playing mechanics. Knowing how to play high notes does not make you a good musician. With that said however, upper register trumpet playing can be exciting when used sparingly and tastefully.

In any major metropolitan area where there is a busy music scene, for the most part, “high notes and $1.25 will buy you a cup of coffee.” (Depending on where you buy your coffee.) The majority of good paying commercial jobs for a trumpet player (television, theatre, recording, club dates, live concerts) rarely require a lead trumpet player to play past a G above high C. Occasionally there may be a written A above high C. In even rarer instances, a player may run across an optional double high C within a written passage.

I enjoy playing in the upper register to a degree, although this was not the primary reason I took up the instrument. In many ways, the range I possess was developed out of necessity.

JASON CARDER – INTERVIEW
Via E-mail – February 9th, 2011

1. **Identifying Optimal Equipment**

    a. **What equipment do you use for upper register playing and why?**

    I use a Yamaha 8310Z in lacquer and a Marcinkiewicz signature mouthpiece designed by Roger Ingram. I had Marcinkiewicz make me one with a 26 throat instead of the standard 28. I like lightweight trumpets that vibrate easily. The 8310z responds instantly and has a sizzling sound in the upper register. It also is one of the most in-tune trumpets I've played. Opening the throat to the mouthpiece allows me to put more air into it and gives me a bigger sound. This equipment is not optimal for the low and mid register but really puts a nice sheen on the top of a trumpet section.

    b. **What is the effect of the proper equipment on upper register?**

    The proper equipment along with the use of compressed air will give the player the stamina to last the whole gig. It's also important to have a sound that carries to the back of the hall. The balance between the player hearing him or herself and the projection out to the audience is crucial. I feel that the equipment I use achieves that balance.

    c. **How does a player go about finding optimal equipment?**

    Students of the trumpet should try all of the trumpets and mouthpieces they can get their hands on. Sometimes a mouthpiece will work great with one trumpet but not another. The combination of those two pieces of equipment is the key.

2. **Psychological versus Physiological Implications:**

    a. **In your opinion, approximately what percentage of high note playing is mental vs. physical?**

    50% each. The player has to have the attitude that notes in the high register are just farther away on a horizontal plane, not higher vertically. This will lead the player to concentrate on air speed and forward momentum. It is also easier to see and hear the note in your head when it's in front of you. I have seen too many players raise their eyebrows and look upwards with their eyes as if they are looking for the note above their head. I have found that every note seems to have a corresponding tongue position. Students who are looking for that elusive note just above their

break should concentrate on playing it softly and finding the right mouth shape. Both the inter-oral mouth cavity and the firmness of their embouchure are important considerations. I make a distinction between the apeture and embouchure. If you are playing on a small mouthpiece it's important to relax your apeture so the air passes through it unhindered. On a big mouthpiece you need to keep the apeture smaller.

b. Is upper register playing a learned trait or is it based on natural ability?

For me it was a learned trait. I realized early on in my career that playing in the upper register would help me expand the amount of gigs I could do.

3. Breathing and Compression:

a. What is your philosophy on breathing concerning the upper register?

A player should create momentum with their air steam before playing the note by not stopping the air before the attack. This can be done with or without a compressed air stream. If I feel I need to use compression, I pretend that the air enters my body about an inch below by bellybutton and continues up to the trumpet without stopping. While the air is coming in I simutaneouly push my bellybutton towards my spine while keeping my upper body relaxed. This creates some compression but not as much as Bobby Shew's "wedge breath" I find this way of breathing sufficient for most of my lead playing duties and piccolo trumpet playing. If I want to go "all out" I will use the "wedge breath"

b. How does air compression effect upper register playing and should a player be able to execute upper register playing both with and without compressed air?

A player should be able to play in the upper register with or without compressed air. Compression will help with endurance and volume.

4. Practice Regimen:

a. How and what do you practice to be able to play consistently in the upper register?

I do a lot of pitch bend excersises. I use David Hickman's book "15 Advanced Embouchure Studies" and make up my own. I practice certain Charlier etudes 8va and attempt to play them as beautifully as I would in the regular octave by singing though the horn. I improvise in the baroque

style using a single valve combination or practice licks from Bach's 2nd Brandenburg concerto with the first and third valve pressed. Slurring up the harmonic series very softly can help a lot with finding the correct mouth shape for those really difficult notes. I divide my time practicing in the upper register between my bach 1½ C and my R.I. Marcinkiewicz. But usually not in the same day.

5. **Additional Comments:**
    a. **Please provide any additional comments you feel would be helpful in advancing the knowledge of upper register playing?**

BRIAN MACDONALD – INTERVIEW
Via E-mail – February 3rd, 2011

1. **Identifying Optimal Equipment**

    a. **What equipment do you use for upper register playing and why?**

    I use a Marcink Shew 1 for lead playing (up to high A) and a customized flat rim for notes to double C or D. Both mp's are cut for Reeves sleeves.

    b. **What is the effect of the proper equipment on upper register?**

    It's easier to get the right sound out of a shallower mp with less work. I can cut through the band rather than trying to bury the band, therefore it gives me more endurance and range.

    c. **How does a player go about finding optimal equipment?**

    Basically, play on the shallowest mouthpiece you can play while still getting a good sound and not sacrificing a lot of technique. Some technique and flexibility may be affected by this change, but for certain situations like lead playing or other needs, you can sacrifice a little bit to gain endurance and notes in the upper register.

2. **Psychological versus Physiological Implications:**

    a. **In your opinion, approximately what percentage of high note playing is mental vs. physical?**

    I'd have to say that 60% is physical, and the mental part I'd split in half 20% mental (actually fighting what your mind THINKS you should be doing) and the other 20% is knowing how to effectively use the resistance of high compression mouthpieces and trumpets.

    b. **Is upper register playing a learned trait or is it based on natural ability?**

    Many of the famous high note trumpet players just had the natural ability to play well in the upper register. There are ways to improve your range based on your type of embouchure, but it's generally hard to kick old habits and take on a new approach.

3. **Breathing and Compression:**

    a. **What is your philosophy on breathing concerning the upper register?**

    b. **How does air compression effect upper register playing and should a player be able to execute upper register playing both with and without compressed air?**

    I learned Bobby Shew's "Wedge" breathe via Roger Ingram. That coupled with learning how to play on a Shew 1 and utilizing resistance rather than fighting it definitely added notes and the right sound to my playing. The first step of the Wedge breathe is most important. The farther down you support your sound (where you start your breathe and lean on that spot) the easier it is to ascend without much effort. If you take a breathe and it's quick and unsupported, by the time you get into the upper register, you will have nothing to lean on; that's when your body takes over and starts doing all sorts of funky things to try and make it happen.

4. **Practice Regimen:**

    a. **How and what do you practice to be able to play consistently in the upper register?**

    Personally, I never practice high notes since most of my playing is in the upper register and mainly lead trumpet parts. I practice low and soft to maintain a balance to my playing. But when I was working on it, I practiced octave glissandos at all dynamic levels to get the right feel up there. Also, I wanted to remember what those slots feel like; that's what the glissandos do. Muscle memory is key to recreating those extreme notes.

5. **Additional Comments:**

    a. **Please provide any additional comments you feel would be helpful in advancing the knowledge of upper register playing?**

    The best advice I can give comes from the teachings of Doc Donald Reinhardt…don't play too loud in the middle register! If you're playing at 100% of your volume on a high F, you have little to no chance of playing higher with the same amount of sound or MORE since it should be higher and louder. Back off on the volume, learn to play by "feel" and not by what YOU hear.

JON FADDIS – INTERVIEW
Via E-mail – February 6, 2011

1. **Identifying Optimal Equipment**

    a. **What equipment do you use for upper register playing and why?**

    I have used a medium bore Schilke since 1971 or so. Since then, I have played mouthpieces made for me by Bert Herrick, Bob Reeves, Bob Giardinelli, Jeff Parke, Greg Black, Schilke, Karl Hammond and Scott Laskey, whose mouthpieces I currently play. Both the mouthpieces and trumpets are played because this particular equipment makes it easier for me to get the sound that I want and to play the music that I hear inside of my head.

    b. **What is the effect of the proper equipment on upper register?**

    I think that a trumpet player using the proper for playing in the upper register and using said equipment properly will have the right sound for the job, better endurance, more gigs (personality excepted) and a longer career. But playing in the upper register is not the "end-all be-all" of trumpet playing. Making music is. There are way too many high –note trumpet players that don't play in tune, they have a terrible sense of time, they don't swing and they can't play a ballad. As Trummy Young sang with Jimmy Lunceford's Orchestra, "It Ain't What'cha Do, It's The Way That'cha Do It!"

    c. **How does a player go about finding optimal equipment?**

    Hopefully, the player realizes that everyone is different and that what works for one person may not work for another player. Some players make a career out of experimenting with mouthpieces and horns, to no avail. Hopefully, with the proper guidance of a teacher or mentor, a player can find the equipment that works best for him or her, with that teacher or mentor on the other side of the horn so that they can give proper feedback to the player. But to me, it comes down to being able to play what one is hearing.

2. **Psychological versus Physiological Implications:**

    a. **In your opinion, approximately what percentage of high note playing is mental vs. physical?**

    A great question! I am assuming that when you say playing in the upper register that you mean being able to play musically in the upper register. The mind tells the body what to do, although this is not always possible. That's why I advocate praying and/or meditating to help the mind to focus and to see things clearly so that one is able to discipline oneself to reach one's goals. Single-mindedness of purpose is the way to achieve. It's all mental, which is why so many trumpet players are "mental"! Seriously, if the mental focus and concentration isn't there, I don't think that it (playing in the upper register) will happen.

    b. **Is upper register playing a learned trait or is it based on natural ability?**

    Upper register playing can be learned if one is willing to work at it for years. Of course, some players have an easier time of it that others. Many people call me a "natural" player, but don't realize all of the hours and hours of practice that I put in, starting when I was ten years old! And I had already been playing for three years. One practices exercises until one doesn't have to think about how to do those exercises anymore and can play/perform them 'naturally". One must be patient…very, very patient.

3. **Breathing and Compression:**

    a. **What is your philosophy on breathing concerning the upper register?**

    Breath control is important but should not be taken out of context.
    For example, one can really do some damage to oneself by over-breathing, being tense and having poor posture. One needs to be relaxed, with good posture and then work on the upper register. My breathing philosophy is (1) to make sure that the mind is focused on what it is going to do. (2) that the body is relaxed without tension in the shoulder and neck areas. (3) take a big breath either through the nose, the mouth or both together.

    Dizzy used to say that breathing begins in one's rectum (asshole) and that one should clench one's butt cheeks together before playing.
    Bill Chase told me that he liked to think that he was going to play a fourth higher than he needed to, thereby making it easier to play what was needed. Tai chi masters advocate breathing through the soles of the feet and gathering energy.

Maynard Ferguson, Bobby Shew and others advocate using a "yoga breath". I think that no matter which method is used, breathing is something that one must practice, especially for the upper register. But above all, do no harm.

b. How does air compression effect upper register playing and should a player be able to execute upper register playing both with and without compressed air?

This isn't something that I have ever thought about.

4. Practice Regimen:

a. How and what do you practice to be able to play consistently in the upper register?

I practice the first page of Herbert L. Clarke's Technical Studies up to Double C, but softly…no crescendo.

I practice my own variations on Carmine Caruso's six notes. If I have time, I practice Arban's page 125, 126 and 127 up to Double C for accuracy.

Most of the upper register practice that I do now is done pianissimo. Still trying to make playing the trumpet as easy as possible.

5. Additional Comments:

a. Please provide any additional comments you feel would be helpful in advancing the knowledge of upper register playing?

I now believe that playing trumpet in the upper register is much, much easier than people think, but only if one is not hurting oneself with bad habits, over-analysis and especially trying to FORCE the notes out. Take it easy and be patient. If one wants to play in the upper register of the trumpet, listen to great music that is played in the upper register: flute sonatas, Paganini Caprices, Bach Sonatas and Partitas. It's funny that when we think of that music, we don't think of the "upper register". We're just hearing MUSIC. And that is what we want to do, isn't it? As a matter of fact, listen to all kinds of great music, because you can't play it if you aren't hearing it!

GABRIELE CASSONE – INTERVIEW
Via E-mail – January 25th, 2011

1. **Identifying Optimal Equipment**

    a. **What equipment do you use for upper register playing and why?**

    I use a shallower mouthpiece with piccolo and modern turmpet 4 sv warburton, when I have to play extreme high parts like brandeburg with piccolo or lead jazz trumpet parts (this last very rarely), I also choose and pay attentin in the backbore of the mouthipiece. ofr example very large inside for the Scherzer piccolo and smaller for the Selmer piccolo

    b. **What is the effect of the proper equipment on upper register?**

    I find that a shallow cup helps high register and gives more brillance to the sound

    c. **How does a player go about finding optimal equipment?**

    I think a player has to try many solution in the time and fidn the and find the one good for him, it not exist a perfect unique solution but many, also a player in the time can decide to change equipement is tha style and way to play has changed or improved .

2. **Psychological versus Physiological Implications:**

    a. **In your opinion, approximately what percentage of high note playing is mental vs. physical?**

    I think that organization mental is about something 80% and less fisical

    b. **Is upper register playing a learned trait or is it based on natural ability?**

    Both, sure is a natural ability but it can improve a lot with a correct study

3. **Breathing and Compression:**

    a. **What is your philosophy on breathing concerning the upper register?**

    I think that Arnold Jacobs expained at the best how to play better in all register, so correct brathing and " song" in the mind for me is a must.

    b. **How does air compression effect upper register playing and should a player be able to execute upper register playing both with and without compressed air?**

    I think it is better to avoid extreme compression , but look for a free blow as it is possible. avoid the ise of force.

4. **Practice Regimen:**

    a. **How and what do you practice to be able to play consistently in the upper register?**

    I like to do some breathing exercises, and practice also with mouthpiece like in Stamp or THompson book going hign and looking for correct brating and good quality of sound, both with mouthpiece and trumpet .the high register exercises by Thompson are good for me. but always looking for a good quality sound imitatin and listening sound of great players. also bending is useful.

5. **Additional Comments:**

    a. **Please provide any additional comments you feel would be helpful in advancing the knowledge of upper register playing?**

    For me it is important look for the better uqality of sound and all Jacobs teachings and working gradually respecting personal limits

BOBBY SHEW – INTERVIEW
Via E-mail – January 4th, 2011

1. **Identifying Optimal Equipment**

    a. **What equipment do you use for upper register playing and why?**

    Of course, I use the Bobby Shew Model YAMAHA 8310Z that I helped design along with Bob Malone. This is a medium bore instrument that is designed for maximum efficiency for my personal needs and for my particular way of playing. I previously played large bore instruments because I had senselessly bought into the old rumor or consideration that one needed to play large equipment if one wanted a big sound and ease of playing. Of course, anyone with any knowledge would now know that this is not true. I found that by reducing the demands of the instrument to activate the scientific principles necessary to make it play, the process became less demanding and therefore efficient.

    As for mouthpieces, certainly an essential and perhaps even MORE important part of the equipment question, I believe in using "the right tool for the job". The scientific principles in mouthpiece design have to do with controlling the air velocity primarily. A deep mouthpiece would cause an energy loss as the air leaves from the vibrating lips which in turn, decreases the velocity. A shallower piece will lessen the energy loss and help maintain air speed. Acoustically speaking, the larger, deeper cup will "open and possibly darken" the sound whereas the shallower cup will tend to add brightness to the sound. There are other factors as well but this is basic to the equipment choices.

    b. **What is the effect of the proper equipment on upper register?**

    Alot of this is answered above in response a) but simply put, what is required to play the upper register is fast moving air (velocity) . The higher the note, the faster the air. The velocity increments are minute and often difficult to discern at the extreme upper register because the degrees of velocity change are minimal from note to note as compared to the lower register.

    c. **How does a player go about finding optimal equipment?**

    One area that is so overlooked in pedagogy is teaching and/or learning HOW to test equipment properly (read sensibly). Of course, each individuals' role in life as a player will differ greatly especially as one matures so the method of testing will become much more personalized and specific. Trying to write a book chapter on this subject has been difficult

because of these variables. I would say that there must be fundamentals that underly the test process in order to make it a valid experience.

Of course, a sensible warm-up especially one that does not overtax the players "chops" but does enable the player to be able to move around his comfort zones with reasonable ease. The first item would be to use common denominators. That means to select or create a particular sequence based upon the players skill level, and his goal(s) in doing the search. This could be as simple as using a chromatic or diatonic scale that does not exceed one's comfortable range. As an example, on your regular mouthpiece, play a diatonic scale from low C to high C, sustaining the top note for 3 or 4 seconds only but long enough to measure your effort level and your sound. I suggest doing it at least 3 times in succession, trying to do it the same each time. Then switch to another horn or mouthpiece (one or the other, depending upon which one you are looking for). Do exactly the same scale again, maybe at least 3 times to make the same measurements. You might be able to tell on the first attempt whether or not the change made things easier or more difficult and / or whether or not it improved your sound or made it less desirable. If you are trying several horns or several mouthpieces, set aside any that make things worse and delete them from the test. If you are testing several items, it might be a good idea to makes notes on paper as you go, but DON'T get hung up on this. Use your ears and your feelings. Sometimes it helps a great deal to close your eyes while doing the test to internalize and heighten the inner sensations.

After awhile, you can increase the test process by adding on a note or two at the top to see where things separate into "yes and no". I would not suggest playing your favorite ego-gratifying licks, favorite etudes or tunes, and especially not trying to rip up to the extreme high register ala Maynard.Keeping your ego (self-importance) out of the entire process (and your life) will prevent you from ruining the test experience.

2. Psychological versus Physiological Implications:

a. In your opinion, approximately what percentage of high note playing is mental vs. physical?

The mind is senior to the body. There is another possible concept here as well. That is "spirit". Not everyone's agrees on the existence is this (especially closed-minded psychologists and psychiatrists) but as an option, look at spirit-mind-body, from the top importance down. If you don't want to think of anything spiritually, then just go with mental-physical. Anyway, your body and its kinesthetic memories are being

dictated to your body in the form of muscle, skeletal, and neurological responses. These dictates come from either the conscious or sub-conscious mind, often referred to as the subliminal mind. A negative thought in your mind can wreak havoc on the kinesthetic responses and cause disruptions in your natural ways of playing. Performance fears are essentially (in my opinion) caused by the ego (self-importance) becoming a part of the action. Therefore your body cannot function at its best as long as anything from the mind over-rides it. This has been known to cause players to increase mouthpiece pressure, overblow the desired velocity, pinch their aperture too tight, etc., all of which destroy your hopes of playing well and efficiently.

b. Is upper register playing a learned trait or is it based on natural ability?

It is a learned ability strictly but there are cases of people who have learned to play in a non-conventional, teacher-less way who give observers the idea that they are just "natural". Of course, there are many variables in "genetic gifts", things that are referred to as talent. I myself did not have lessons as a kid. I did attempt to get a couple of lessons from a local player who disliked jazz first of all, and who did not have good teaching skills or a clear understanding of principles about playing. I stayed away from him, nice man that he was.

When a young player gains a special attraction to a player such as Maynard Ferguson, a frequent icon in this situation, the young player keeps the sound of his icon "in his head" (mind & spirit) and when practicing, tries everything he can think of to try to emulate and learn to gain the abilities of said icon. In the case of "gifts" , some players really learn to play similarly or at least "on the path" without ever understanding the principles of HOW or WHY they are able to do what they do. This is OK except for those times when something occurs that creates a situation where the "chops" don't want to work. The lack of understanding prevents resolution to the problem and then panic sets in, fear surfaces, the mind interacts and you're in trouble!

I am a great supporter of the self-teaching concept but in coincidence with highly principled guidance based upon fact rather than opinion. I think that students who are strictly book learners have less of a chance of success of attaining high levels of musicianship than those who develop from the "inside". The variables here, tho, are tremendous from person to person.

3. **Breathing and Compression:**

    a. **What is your philosophy on breathing concerning the upper register?**

    As you may know, I have for many years become associated with the teaching of the Yoga Complete Breath which was introduced to me by Maynard Ferguson in a book by Yogi Ramacharaka. It was Bud Brisbois, however, who knew how to show me how it worked and he is responsible for "teaching" it to me.

    Aside from this method or any other ideas on breathing, one's ability to using an efficient method of breathing is of extreme importance. A simple of explanation as to what makes a wind instrument work is that we simply take in air, compress it to varying degrees, and then send it outward thru either vibrating lips or a reed on a mouthpiece at the desired (learned, hopefully) velocity for the desired note and the desired dynamic. Whatever method of breathing a person has been taught and more importantly, chosen to use, it cannot be taken lightly.

    b. **How does air compression effect upper register playing and should a player be able to execute upper register playing both with and without compressed air?**

    I think this is answered above. I do not know of any way of playing the upper register without compressed air, even the tiniest squeek. Even without a big breath, if you merely squeeze your facial muscles together and squirt a note thru a tiny aperture, your are still compressing. If anyone can demonstrate this to me without any compression, I'm an eager learner and would welcome this entry into a world without science.

4. **Practice Regimen:**

    a. **How and what do you practice to be able to play consistently in the upper register?**

    As for practicing the upper register, gradients are necessary for learning ANYTHING, I believe. Thru my time with Bud Brisbois, he showed me that doing glissandos thru the partials and clicking on each slot as I ascended, enabled me to get a feeling of ascending without overblowing. As I became more familiar with it, I was able to change to aperture and therefore the dynamics. This resulted in my pretty quickly being able to ascend all the way to Double C without exaggerated pressure and pinching in the lip area. I still use it as a primary means of keeping my chops in shape without having to do excessive practice regimens. I also like to extend this routine by playing melodies in the upper area to work on the

aspect of dealing with intervallic adjustments. I prefer to do them on the mouthpiece first and then transfer them to the horn.

5. Additional Comments:

a. Please provide any additional comments you feel would be helpful in advancing the knowledge of upper register playing?

A fantastic quote by Ralph Waldo Emerson:

"As to methods, there may be a million and then some, but principles are few. The man who grasps principles can successfully select his own methods. The man who tries methods, ignoring principles, is sure to have trouble."

One cannot eliminate the principles (facts/science) of wind instrument playing and still expect to attain any decent level of skill and understanding. The age-old methodologies beg for re-assessment in our current day of extremely high technology and access to a clearer understanding of scientific principles.

CHAD SHOOPMAN – INTERVIEW
Via E-mail – February 14th, 2011

1. **Identifying Optimal Equipment**

    a. **What equipment do you use for upper register playing and why?**

    I play a custom Warburton mouthpiece top with a 10 backbore for my upper register playing. The inner diameter of my top is roughly .560 and the outer is 1.005. I play a Powell Custom Trumpet designed with lead and upper register playing in mind. Both components were designed to be efficient. The mouthpiece is quite small and the trumpet is medium large in bore size. Being able to play effectively with a good, full sound while using as little tension as possible is the reason for my equipment choices. In working with custom equipment makers, I have found a higher level of flexibility in design. They worked with me to create something that reinforces my strengths and compensates for my weaknesses.

    b. **What is the effect of the proper equipment on upper register?**

    The proper equipment for upper register playing is truly a unique and lonely decision. What works for one, may not work for another. However, the desired effect is efficient work with optimal results. It is often the mindset that the bigger the equipment the better. I have found this to be erroneous in my own personal experience. It may work for some, but I equate it to trying to hammer a nail into a wood board with a banana. Obviously, you need the right tool for the right job. If I am playing in an orchestral situation or a lower section part, then I might choose slightly larger equipment suited to the environment. For upper register work, I want to create the sound in my head with the most ease without sacrificing any other aspect of my playing. If it sounds great and allows me to play musically than that is a good piece of equipment. Keep in mind, too small is equally destructive as too big.

    c. **How does a player go about finding optimal equipment?**

    The search begins in discussions with players/teachers that have had experience and success with equipment choices. The resource successful musicians provide one another are invaluable. Equipment is no exception. These discussions create a great starting place. The next step is honest evaluation of your musical goals. From the type of music, to the sound you want to have performing it, this self-discovery is critical. Chasing a high note with equipment is a recipe for musical failure. Ultimately, you need to decide on equipment that allows you to do what you would like without taking away from the other aspects of your playing. The final step

is trying out different equipment. Ideally, finding a brand of equipment you like more than others can point you in the right direction for custom work…tweaking a design you like to be even more suited to that your specific needs.

2. Psychological versus Physiological Implications:

a. In your opinion, approximately what percentage of high note playing is mental vs. physical?

I believe it is 50/50. Playing in the upper register is a punishing physical endeavor. Beyond the embouchure, the muscular exertion of the abdomen and back are extremely demanding. There is no doubt in my mind the physical nature and athletic ability needed to accomplish upper register playing. With any physical activity, tension can arise and create problems. This leads to the mental game of upper register playing. Physical tension is the most common mental block to successful high note playing. It sounds like a contradiction, but I believe tension is 90% mental. Whether it is the visual stimuli of seeing several ledger lines and realizing how high something is or knowing you have to play a high passage and it is going to be hard to do, the mind is the great blockade to overcome. Players often forget that a G on the top of the staff was high for them at one point. Slowly, it became familiar. With that familiarity came comfort and relaxation about playing that pitch. Suddenly, you can "taste" the note before you play it and realize where it will be. There is no tension because the note is played often and becomes a comfortable part of your trumpet vocabulary. This process extends into the extreme register. Not only tension, but also air power and pacing are part of the mental considerations that can yield wonderful or discouraging results. All the physicality in the world cannot overcome a mental state unprepared for the demand of upper register playing and vice versa.

b. Is upper register playing a learned trait or is it based on natural ability?

There are varying degrees of talent for any skill set. Some are clearly born with the ability to perform certain aspects of a skill better than others. I do believe upper register playing is a natural ability to varying degrees. However, I think hard work trumps talent more often than not. I believe high note playing is a learnable skill with the variable being time. It may take one person years longer than another. Desire is often the deciding factor. Obviously, when talent meets hard work you find the true masters of upper register trumpet playing. Maynard Ferguson, Arturo Sandoval, and Wayne Bergeron are just three examples of this.

3. **Breathing and Compression:**

    a. **What is your philosophy on breathing concerning the upper register?**

    Air is everything! Air speed, air temperature (hot vs. cold), air support, and air capacity are absolutely essential to successful upper register playing. A lot has been written about this subject. Bobby Shew has the most convincing thoughts on this in my opinion. Whether you use the "wedge" breath or not, the notes in the upper register require fast, cold, powerful, relentless air support. Without an established breath in and out you cannot play high well…period. The breath in is of great consequence. You need to take in enough air and expand your lung area to accomplish the desired note, or passage, but you can take in too much and the back pressure return will limit your output, or cause you to faint (something that can happen if you don't get enough air too). My first and last thought, in the instant before I play, is about air and breathing. I, of course, am thinking of a million other musical factors in that instant, but the first and last concern breathing.

    b. **How does air compression effect upper register playing and should a player be able to execute upper register playing both with and without compressed air?**

    Even when playing in the lower register the air is compressed. It is really about air speed. More to the point, it is about how much compression. My first priority is quality of sound, followed by presence (volume). You can play a great high G quietly with vibrato and not need the same rate of compression you would need for the fff end of the chart high G with a shake on it. In my opinion a player should be able to play with a lot or a little compression based on musical demand. Ideally, there should never be a situation where you cannot accomplish the musical goal of a composition. You need to be prepared for every situation.

4. **Practice Regimen:**

    a. **How and what do you practice to be able to play consistently in the upper register?**

    My situation is unique as I am fortunate (or not!) to be asked to play in the upper register 5 days a week, several hours a day. That alone allows me to work on that aspect of my playing regularly. My practice time is spent playing opposites. I play slow, low, and lyrical to help balance the daily requirements of my gig. The times I do work on range are when I am feeling very good and my chops are working and I play a note or passage and nail it. I stop immediately and close my eyes, put my horn down, and

mentally recreate the sensation and feeling of that experience. I set my chops (without the horn), try to remember the air and how I used it. I replay it over and over in my mind trying to imprint the positive things I did and establish a good memory to draw on in the future. We always listen to ourselves so critically. We sometimes forget to reinforce the things we do well. I find that kind of practice very helpful.

5. **Additional Comments:**
    a. **Please provide any additional comments you feel would be helpful in advancing the knowledge of upper register playing?**

ERIC MIYASHIRO – INTERVIEW
Via E-mail – January 25th, 2011

1. **Identifying Optimal Equipment**

   a. **What equipment do you use for upper register playing and why?**

      I play on equipment I designed. It is a Yamaha YTR 8340EM and a Yamaha EM 1 mouthpiece. Over the years, I have had the great pleasure of working with many of the top manufactures, and what I found out was that there are so many ideas, concepts, theory as to how and why things works on trumpet design. It's not really important who's right, but what works for you.

      My take on all of this is to find a equipment that is the easiest to get your given job done.

   b. **What is the effect of the proper equipment on upper register?**

      Proper equipment, or the "right tool for the job" is a must for any type of work. I believe there is no "magic mouthpiece" or instrument that will add notes to your current range. But the "proper" equipment can make your life easier. You have to consider about the different color and timer needed to play in variety of types of situations.
      We need to adapt or sound according to the music, big band lead, solo, horn section, wind ensemble, symphonic, etc. It's not about just hitting the notes, but playing them to blend in the context of the music.

   c. **How does a player go about finding optimal equipment?**

      It's all very personal, just go with your gut feeling. Also it's a never ending quest, (at least it is for me.....) because your music is, and should be constantly evolving and changing.

      Don't stop experimenting and trying different equipment, it is always heathy to be open to a new ideas, and it can keep your ears fresh to your over all playing.

2. **Psychological versus Physiological Implications:**

    a. **In your opinion, approximately what percentage of high note playing is mental vs. physical?**

    b. **Is upper register playing a learned trait or is it based on natural ability?**

    90% mental, 10% physical.

    In a way, upper registe maybe something your are born with. One must be able to think and hear your music in the upper register. You need certain type of personality to be in command of the extreme register. It is very demanding physically and mentally, so you need a strong persona to make things happen when you are on the chopping block. But also if you really work at it, and learn how to think in that register, there should be no reason why you can't extend your range.

3. **Breathing and Compression:**

    a. **What is your philosophy on breathing concerning the upper register?**

    b. **How does air compression effect upper register playing and should a player be able to execute upper register playing both with and without compressed air?**

    I believe in "less is better". It is obvious that you need speed of your air, but not the volume of it. Common sense can tell you that it is easier to move small amount of air than the large. But also you must think of your lips. Air is important, sure..... but you need to think about what is affecting the air column to resonate the pitch. Lip tension, aperture, air speed, these things need to work in balance to sound the upper harmonics.

4. **Practice Regimen:**

    a. **How and what do you practice to be able to play consistently in the upper register?**

    I practice a lot on piccolo trumpet. You can't muscle out things on a piccolo, so your body will learn to be more efficient. I love to play baroque trumpet solos, Vivaldi, Tellemann, Marccel, Tartini, Bach, Morzart etc, they are fun, better than etude and method books. I never practiced just the "High-Notes" never tried to see how high I could play. I always played songs and melody.

Upper register playing is not a sport, it's not about making the note, you have to create music in that register that will emote your audience, you shouldn't play to "impress" , but to touch them.

5. **Additional Comments:**

    a. **Please provide any additional comments you feel would be helpful in advancing the knowledge of upper register playing?**

GREG GISBERT – INTERVIEW
Via E-mail – February 7th, 2011

1. **Identifying Optimal Equipment**

    a. **What equipment do you use for upper register playing and why?**

    I use two mouthpieces for upper register playing, first is the Bobby Shew Lead made by Yamaha and I use that because it more versatile and can still get a warm sound in the low register while still able to execute the upper register. If I have a lot of lead on an extended tour, I play the Roger Ingram model marcinkiewicz because it allows me to play more consistently for longer periods of time and is easier to play in the upper register.

    b. **What is the effect of the proper equipment on upper register?**

    The proper equipment allows me to play as relaxed and comfortable as possible while at the same time giving a very bright and clear sound. It is important to find the proper balance between trumpet and mouthpiece to stay relaxed while playing. Play the smallest mouthpiece you can still get a big sound on.

    c. **How does a player go about finding optimal equipment?**

    When looking for a mouthpiece design for upper register playing, I feel the player must first check the mouthpiece and check the registers of low C and high C for at least 10 to 15 minutes and then if you found a small mouthpiece that has a clear sound and you can play between low C and high C, at a medium soft volume, chromatically go upwards from high C. The reasoning of that is to see if there are any strange breaks between the notes. Eager or impatient players just blast high notes and of course they come out. With brut force you can make any note come out but later on the inconsistencies of the mouthpiece will start to show up. Joe Shepley taught me you check your E above high C, sometimes Eb, if it speaks clearly and doesn't go flat, the backbore and throat is almost always a good combination with the leadpipe.

2. **Psychological versus Physiological Implications:**

    a. **In your opinion, approximately what percentage of high note playing is mental vs. physical?**

    For me, it is about 80% mental and 20% physical. I have naturally set up embouchure so I didn't have to practice for hours and hours to find those notes. If I am mentally prepared, physically relaxed, and I am not worried about the mechanics and play what I hear in my head. My understanding of the physics behind those sounds limited. The famous Yogi Berra said, baseball is 90% mental and the other half is physical.

    b. **Is upper register playing a learned trait or is it based on natural ability?**

    I think it varies from person to person. For me it was a learned trait initially. I like that sound and wanted to make that sound. I took lessons with Bobby Shew and Roger Ingram told me to play soft. After I learned how to do it, it became natural instinct.

3. **Breathing and Compression:**

    a. **What is your philosophy on breathing concerning the upper register?**

    I feel like there needs to be enough air in the chest cavity for compression to occur but not force. I look for a feeling where the note is resonating in my chest cavity and my chops and I let out a little bit at a time. The air is trying to get out of my chest so I don't want to force it out, I want to let it out.

    b. **How does air compression effect upper register playing and should a player be able to execute upper register playing both with and without compressed air?**

    A player should be able to be able to play those notes with and without compression. The difference is without compressed air the sound will be much softer but with compressed air the sound will be loud.

4. **Practice Regimen:**

    a. **How and what do you practice to be able to play consistently in the upper register?**

    I practice softly and slowly in the upper register. If I try to muscle it, my average will not be very good. The slot for those notes is so small the

smallest amount of unnecessary motion can make the notes squirrely. I practice the high notes relaxed, softly and still listening for the right quality of sound.

5. **Additional Comments:**
    a. **Please provide any additional comments you feel would be helpful in advancing the knowledge of upper register playing?**

FRIEDEMANN IMMER – INTERVIEW
Via E-mail – February 13th, 2011

1. **Identifying Optimal Equipment**

    a. **What equipment do you use for upper register playing and why?**

    I play an Egger SI 5 mouthpiece for Baroque-Trumpet and an Egger PI 7 for Piccolo, both with a big rim. The physics of the mouthpiece – a sharp corner inside (cup – hole) makes the high playing possible.

    b. **What is the effect of the proper equipment on upper register?**

    The sound is great and warm and fits better to the other instruments

    c. **How does a player go about finding optimal equipment?**

    He/she should try a not to small mouthpiece, not too shallow and play with more air.

2. **Psychological versus Physiological Implications:**

    a. **In your opinion, approximately what percentage of high note playing is mental vs. physical?**

    Difficult to say, I think without physical training it does not work, but you also need the mental training – so 50 : 50

    b. **Is upper register playing a learned trait or is it based on natural ability?**

    Again both, but I think the extremely high register playing is mostly based on natural ability.

3. **Breathing and Compression:**

    a. **What is your philosophy on breathing concerning the upper register?**

    Breathing is the most important thing with all Trumpet playing. The question is what sound you want to have. A focused, small sound can be made with the lipps, a round, grat sound needs more air.

b. How does air compression effect upper register playing and should a player be able to execute upper register playing both with and without compressed air?

I think you need compressed air for high playing.

4. Practice Regimen:

a. How and what do you practice to be able to play consistently in the upper register?

It helps to do muscle-lipp-training. Very or most important is the imagination to have a good sound in the medium register. If the medium register closes, you do not have a high register.

5. Additional Comments:

a. Please provide any additional comments you feel would be helpful in advancing the knowledge of upper register playing?

The question is what you want, what sound you want. For a Big Band Lead sound you need different technique as for Baroque high playing.

NATHANIEL MAYFIELD – INTERVIEW
Via E-mail – January 2nd, 2011

1. **Identifying Optimal Equipment**

    a. **What equipment do you use for upper register playing and why?**

    I play on a Schilke Symphony Series M3 for piccolo and a Naumann E short model for baroque playing

    b. **What is the effect of the proper equipment on upper register?**

    It makes a huge difference, although it's only one component. I think fundamentals are more important overall.

    c. **How does a player go about finding optimal equipment?**

    Try hundreds of mouthpieces and horns!! It takes a long time to find what works, and you must constantly tweak it as your playing changes..

2. **Psychological versus Physiological Implications:**

    a. **In your opinion, approximately what percentage of high note playing is mental vs. physical?**

    1/3 mental and 2/3 physical

    b. **Is upper register playing a learned trait or is it based on natural ability?**

    Natural ability can help, but will only get you so far. In the end, it's your ability to adapt and learn

3. **Breathing and Compression:**

    a. **What is your philosophy on breathing concerning the upper register?**

    Breathing and compression is central to my approach. I think you must have massive compression in the lungs to do it correctly

b. How does air compression effect upper register playing and should a player be able to execute upper register playing both with and without compressed air?

I don't believe there is such a thing as de-compressed air. There is only more or less compression. So, in that sense, I would say the trick is to play with as much compressed air, with as little tension as possible (but always BUILD your tolerance for compression so you can be relaxed!)

4. Practice Regimen:

a. How and what do you practice to be able to play consistently in the upper register?

My teacher Ray Mase always said: If you want to get better at baseball, practice baseball! In that sense, if you want a good high register, practice up there!! So, I do practice up there, but usually only a week or two before I have to concertize up there..

5. Additional Comments:

a. Please provide any additional comments you feel would be helpful in advancing the knowledge of upper register playing?

I don't believe the air is moving in the oral cavity. Once you can get your mind around this, you can do different things like put your bottom lip behind your upper teeth, keep your tongue, high, use your whisper valve muscles, and use only a little bit of your lip to release the air. I don't believe the air starts moving until it leaves the lips! Also, be sure to vibrate close to the white and outer red of the lips, and keep the top lip mostly in front of the top teeth! Hope this helps.. Good luck and take care!

PAUL STEPHENS – INTERVIEW
Via E-mail – January 19th, 2011

1. **Identifying Optimal Equipment**

    a. **What equipment do you use for upper register playing and why?**

    I use a mouthpiece of my own design made by John Stork of Stork Custom Mouthpieces. This mouthpiece has a shallower and narrower cup than a more traditional classical type trumpet mouthpiece, i.e. Bach 1C. My lead mouthpiece is similar in size to a Warburton 5sv. I only use this mouthpiece for lead playing. I use a Bach 1 ½ C for legit or section playing. The lead mouthpiece helps to create a brighter and more projecting sound with less effort. Because of the shallower cup, it also helps to more easily compress the air going into the instrument, which is essential in producing that sizzle or burn associated with a strong commercial sounding upper register. I'm a Yamaha performing artist and I'm currently performing on a Yamaha 8345RGS trumpet. It's a large bore, heavy receiver instrument that I really like. Some lead players tend to prefer a lighter, smaller bore trumpet. Different strokes for different folks I suppose.

    b. **What is the effect of the proper equipment on upper register?**

    Answered above.

    c. **How does a player go about finding optimal equipment?**

    Through trail and error, I remember Maynard Ferguson saying, "One man's sugar is another man's poison." In other words, what works for one person may not work for you. You have to figure out what feels and sounds the best for your particular embouchure. The best way to do this is to try several different brands and sizes of mouthpieces without paying any attention to what size or brand your trying. For example; Take 10 random mouthpieces and play them one at a time creating two different piles of mouthpieces; one pile of your likes, and another of your dislikes. Then take the ones you liked and repeat the process until you're down to only one mouthpiece. Remember that you should not be looking for a mouthpiece that will only help you play in the upper register. You will have to make some compromises because a good sound, intonation, and flexibility are more important than strictly playing easier high notes. You can go through the same process in searching for the right trumpet.

2. **Psychological versus Physiological Implications:**

    a. **In your opinion, approximately what percentage of high note playing is mental vs. physical?**

    Short of a some type of physical deformity, I believe it's more than 90% mental.

    b. **Is upper register playing a learned trait or is it based on natural ability?**

    In my case it is definitely a learned ability and it took a lot of dedicated practice for me to learn it. But this varies from person to person. Some people seem to develop it very naturally. I do believe anyone can develop this ability with proper guidance and hard work.

3. **Breathing and Compression:**

    a. **What is your philosophy on breathing concerning the upper register?**

    Training your body to compress air is essential to developing a strong upper register above high G. It's the one thing that separates players that can play a strong high G and a player with a "strong, full sounding," double high C.

    b. **How does air compression effect upper register playing and should a player be able to execute upper register playing both with and without compressed air?**

    The upper register can be developed without air compression. I know a few classical trumpet players that can play with a lot of control up to, and beyond, double high C. Although, because they cannot compress the air, they are unable to produce that burn, or sizzle, that is an essential trait of a powerful upper register.

4. **Practice Regimen:**

    a. **How and what do you practice to be able to play consistently in the upper register?**

    I have an expanding arpeggio based exercise that I do every day as a warm up. It takes me about 15 minutes to perform. Then I follow that up with a 5-minute lip trill exercise followed be 5 minutes of pedal tones. I like to start this warm-up 45 minutes prior to the downbeat of a performance. For

me, flexibility is everything. Staying flexible helps me greatly with accuracy, consistency, and range.

If I've been off the horn for a few days, I'll play things that help to build my endurance back up. I will sometimes play the first cornet parts on marches taking all the repeats. Then go back and play the same march again up an octave. I also have a practice book that I've created from several other books that I own. It's about a hundred pages of various etudes; Arban and Clarke studies, Vizzutti exercises, solo, and scale exercises. I'll play through the whole book everyday until I can get all the way through it without a break.

On a normal day of performing or rehearsing with a band, I will only do the warm-up portion. I also believe that soft long tones can be very helpful especially after playing very demanding or loud performance. Playing soft long tones can help to keep you chops focused, and your tone pure and clear.

5. Additional Comments:

a. Please provide any additional comments you feel would be helpful in advancing the knowledge of upper register playing?

I truly believe that anyone with the right fundamentals and dedication is capable of developing a strong upper register.

RASHAWN ROSS – INTERVIEW
Via E-mail – January 21st, 2011

1. **Identifying Optimal Equipment**

    a. **What equipment do you use for upper register playing and why?**

    Being that I don't consider myself a "lead" trumpet player, I haven't really delved into acquiring equipment for the sole purpose of upper register playing. I have 2 Monette trumpet which i play regularly. One is a P3 STC which I call my "big horn" Mostly used on my regular gig with DMB because of the wide rage in sound I can pull from the horn. the other is a MF(Maynard Ferguson) Prana which is a smaller horn. I use it for more commercial section setting. This horn obviously lends itself to easier upper register playing, but I never set out to find equipment just for that purpose.

    b. **What is the effect of the proper equipment on upper register?**

    "You don't run a marathon in wing tips". This saying is very true. It's key to have the proper equipment for the job at hand. The proper equipment can make all the difference in the world, but I honestly feel the the player is the determining factor. I've seen guys play lead on orchestral set ups and sound fantastic.

    c. **How does a player go about finding optimal equipment?**

    Trial and error until the player finds the equipment that he or she is most comfortable with.

2. **Psychological versus Physiological Implications:**

    a. **In your opinion, approximately what percentage of high note playing is mental vs. physical?**

    70% mental, 30% physical

    b. **Is upper register playing a learned trait or is it based on natural ability?**

    BOTH

    It can be learned and having some natural ability helps as well.

I wasn't a guy with a ton of range in my younger years, or my college years. I wanted to play small group jazz for a living. Then the real world hit me when I moved to New York City. In order to make money, I had to develop range. So I taught myself to play in the upper register. Don't it was the correct way to do it, but I learned.

3. **Breathing and Compression:**

    a. **What is your philosophy on breathing concerning the upper register?**

    Don't really have one. I'm a self taught player. I just make sure I have enough air supply to get me through the phrase.

    b. **How does air compression effect upper register playing and should a player be able to execute upper register playing both with and without compressed air?**

    I think having the ability to execute with and without compressed air can be very helpful. I have the compressed air thing down. It's playing in the upper register without it that I have to work on.

4. **Practice Regimen:**

    a. **How and what do you practice to be able to play consistently in the upper register?**

    I practice ascending "C" scale in intervals(2nds, 3rds, 4ths etc. all the way to 7ths) to the highest notes I can play until failure without taking the horn off my lips. I spend maybe a week on one interval. Breaths are taken through the nose during the exercise. 4/4 time, 2 bar phrases, 2 half notes in the first bar and a whole note in the second bar. Must rest for a full bar before continuing to the next scale tone.

    For example, scale in 4ths would be:
    C haif note, F half note, back down to C whole note. One bar of rest. Then on to D half note, G half note, back down to D whole note. continue this pattern all the way into the upper register until failure and nothing comes out of the horn. Must be done without taking the horn off your lips .

5. **Additional Comments:**

    a. **Please provide any additional comments you feel would be helpful in advancing the knowledge of upper register playing?**

TAGE LARSEN – INTERVIEW
Via E-mail – February 6th, 2011

1. **Identifying Optimal Equipment**

    a. **What equipment do you use for upper register playing and why?**

    I use a Momotake 16 E * mouthpiece. It is the mouthpiece I use for general playing in the orchestra and for solo performances.

    b. **What is the effect of the proper equipment on upper register?**

    I try not to think about equipment and it's effect on high range.

    c. **How does a player go about finding optimal equipment?**

    I would suggest asking performers who's high range you admire what equipment they use. After that it's up to the player to practice.

2. **Psychological versus Physiological Implications:**

    a. **In your opinion, approximately what percentage of high note playing is mental vs. physical?**

    70% mental. 30% physical.

    b. **Is upper register playing a learned trait or is it based on natural ability?**

    I believe it's primarily based on learning and practice.

3. **Breathing and Compression:**

    a. **What is your philosophy on breathing concerning the upper register?**

    Breathing is very important. Good Abdominal support is crucial.

    b. **How does air compression effect upper register playing and should a player be able to execute upper register playing both with and without compressed air?**

    It depends on how high. I believe that notes above high C require a food amount of compression.

4. **Practice Regimen:**

    a. **How and what do you practice to be able to play consistently in the upper register?**

        Every day.

5. **Additional Comments:**

    a. **Please provide any additional comments you feel would be helpful in advancing the knowledge of upper register playing?**

        Trying to maintain a good balance between good support, good air compression and relaxation are the keys to achieving a solid high range. It is important to remember that to build a consistent high range daily, methodical practice is essential.

TONY KADLECK – INTERVIEW
Via E-mail – February 2nd, 2011

1. **Identifying Optimal Equipment**

    a. **What equipment do you use for upper register playing and why?**

    While I do not use a different horn, I do use a shallower mouthpiece (Monette B5LM) for this. I feel that this gives me enough edge to cut through a large band or one with louder electronic instruments.

    b. **What is the effect of the proper equipment on upper register?**

    Increased volume and edge. Also ease.

    c. **How does a player go about finding optimal equipment?**

    Trial and error. Years of experimentation and consultation with other players/teachers were factors for me. Obviously each player is different. Some gravitate toward a smaller rim diameter. Others (myself included) need a wider rim diameter but require a more shallow cup. I feel that resistance needs to be created somewhere, either within the horn, the mouthpiece, or sometimes both.

2. **Psychological versus Physiological Implications:**

    a. **In your opinion, approximately what percentage of high note playing is mental vs. physical?**

    My guess would be 70% physical and 30% mental.

    b. **Is upper register playing a learned trait or is it based on natural ability?**

    Both. In some cases I think that people are born with teeth/facial structures that are conducive to playing high notes. It seems easy for them almost immediately. But there have also been many cases where players with a limited upper register then practice in such a way that they develop excellent high notes.

3. **Breathing and Compression:**

    a. **What is your philosophy on breathing concerning the upper register?**

    I was always told to "fill up from the bottom of my gut", and to "not raise my shoulders". Honestly, I have always wanted to learn the "wedge" system, but have never been able to understand it.

    b. **How does air compression effect upper register playing and should a player be able to execute upper register playing both with and without compressed air?**

    I'm really not well versed in this topic. Sorry, I will have to pass!

4. **Practice Regimen:**

    a. **How and what do you practice to be able to play consistently in the upper register?**

    As with anything, prolonged repetition and practice are the keys. Personally, I do a large amount of lip slurs at a lesser volume, just to get the feel of where those higher notes slot. (Going up and down the overtone series at a mezzo-piano or mezzo-forte.) (Later, I will add more air/volume). Sometimes I will make up my own exercises based on what is problematic for me. (example: notes that I can't find a slot for) Creating a muscle memory (for each note) within my chops is what I am striving for.

5. **Additional Comments:**

    a. **Please provide any additional comments you feel would be helpful in advancing the knowledge of upper register playing?**

    Obviously, playing the trumpet is a very physical thing. Generally, I feel better about my trumpet playing when I'm in good physical condition, which is not as often as I'd like. Upper register playing also certainly becomes more difficult with age. That's why I am amazed by someone like Doc Severinsen. At 82 he still has the phenomenal ability to play high notes with a beautiful, full sound. I know how difficult that is at (roughly) half his age, so I can't even imagine the amount to time it must take someone like Doc to keep his chops together and sound so great.

ANTHONY PLOG – INTERVIEW
Via E-mail – January 3rd, 2011

1. **Identifying Optimal Equipment**

    a. **What equipment do you use for upper register playing and why?**

    I would normally use the same equipment for high register as for all other playing (keep in mind that I was a classical player and not a big band player). Occasionally I would use either a smaller mouthpiece or trumpet for something that was extremely challenging, but normally my equipment would be the same as I would usually use.

    b. **What is the effect of the proper equipment on upper register?**

    I would think that the effect of using proper equipment for upper register would be the same as for anything else - positive. Meaning, of course, that using equipment that would not be proper (i.e. not matched to the specific player) would have a negative effect.

    c. **How does a player go about finding optimal equipment?**

    Finding optimal equipment is always tough, and I think one idea that could possibly help is: don't look for a change of equipment when there are problems with playing. Only seek new and better equipment when playing is normal, in other words, when the chops are working. Outside of that, I think it is important to be patient and open, and to also get feedback from colleagues.

2. **Psychological versus Physiological Implications:**

    a. **In your opinion, approximately what percentage of high note playing is mental vs. physical?**

    This is a very tough question, and I think that quite often the mental can influence the physical. I don't feel capable of giving a percentage, yet I do feel that the mental tends to be underestimated with all aspects of playing.

    b. **Is upper register playing a learned trait or is it based on natural ability?**

    I would say that upper register playing is a combination of being a learned trait and natural ability. The natural ability is talent, but in order to develop that talent into skill one needs to put in a great amount of work.

3. **Breathing and Compression:**

    a. **What is your philosophy on breathing concerning the upper register?**

    I would say that it is much more important to concentrate on air rather than brute force, and in the upper register the air should be faster (once I mentioned to Al Vizzutti that I would love to have his high register and he said, "it's no big deal, just faster air.")

    b. **How does air compression effect upper register playing and should a player be able to execute upper register playing both with and without compressed air?**

    compression - this is an area that should be answered by more of an expert on high register than myself.

4. **Practice Regimen:**

    a. **How and what do you practice to be able to play consistently in the upper register?**

    I used to practice scales in the upper register, and other things as well. What I now do with students is scales or other exercises that are slurred, and almost always at a softer dynamic, so that the student can learn how the lips should combine with the air. In other words, getting the high notes the right way and not with undue force. And if a specific high note doesn't come today, keep the right form and don't force or use too much pressure. One can get a result by doing things incorrectly, but that only means that the same thing will happen tomorrow. So think of a long range goal rather than the idea that everything has to be accomplished in a short period of time.

5. **Additional Comments:**

    a. **Please provide any additional comments you feel would be helpful in advancing the knowledge of upper register playing?**

    I would say the student should always be open to new ideas, and with youtube one can get great ideas on upper register or any other aspect of playing from some of the greatest people in the business.

WAYNE BERGERON – INTERVIEW
Via E-mail – February 28th, 2011

1. **Identifying Optimal Equipment**

    a. **What equipment do you use for upper register playing and why?**

    I have used a couple different of mouthpieces over the years. In the past I played the Marcinkiewicz Bobby Shew 1.5 and larger equipment in general. I don't have a mouthpiece I use specifically for upper register playing. I currently play a custom GR mouthpiece with close to a 3 rim and is very rounded. I use this mouthpiece for comfort so I don't hurt myself. I play a Yamaha 8335LA trumpet and it is the trumpet I designed for Yamaha. It is a medium large bore horn with a fairly large lead pipe and tuning crook.

    b. **What is the effect of the proper equipment on upper register?**

    I think that it is important to have the right balance . . . player, horn and mouthpiece. We are all different, so what is shallow for one person isn't necessarily shallow for another person.

    c. **How does a player go about finding optimal equipment?**

    Trial and error. For young players, I think there is a reason a 7C comes with every trumpet, it is a size that is right in the middle. As far as an established player, I never think the mouthpiece should hinder the ability to make a good sound.

2. **Psychological versus Physiological Implications:**

    a. **In your opinion, approximately what percentage of high note playing is mental vs. physical?**

    I think it is a lot more physical then it is mental. Our mind can definitely play tricks on us. When I say physical, I don't mean physical strength, I mean getting all the physical aspects in play . . . staying relaxed while creating compression. I would say it is 80% physical and 20% mental.

    b. **Is upper register playing a learned trait or is it based on natural ability?**

    I think it is both. I am a firm believer that we don't build range, we find range. For me, I could do it when I was a kid and kind of had natural high chops, but I have watched many players who didn't have it when they

were young and learned to do it later on in life. There is no one set of rules, it is all about getting the airstream and mouthpiece in the right place and getting the horn ringing.

3. **Breathing and Compression:**

    a. **What is your philosophy on breathing concerning the upper register?**

    I don't know if I have a philosophy on breathing in the upper register, but I kind of have a philosophy on breathing in general. No matter how much air we take in, only so much will go through that little hole. I like to take a relaxed breath using an open syllable like the "O" syllable. It's important to breath for the phrase.

    b. **How does air compression effect upper register playing and should a player be able to execute upper register playing both with and without compressed air?**

    I think compression effects the upper register greatly. I think compression is essential for upper register playing.

4. **Practice Regimen:**

    a. **How and what do you practice to be able to play consistently in the upper register?**

    I don't practice a lot of upper register stuff actually, but I do make sure I set my foundation every day. My first goal when I pick the horn is to make a decent sound, and I won't move on until I can. It is important to lay a foundation before practicing anything high. I don't think it is important to just hammer in the upper register, it is important to find a good balance.

5. **Additional Comments:**
    a. **Please provide any additional comments you feel would be helpful in advancing the knowledge of upper register playing?**

WALTER WHITE – INTERVIEW
Via E-mail – January 24th, 2011

1. **Identifying Optimal Equipment**

    a. **What equipment do you use for upper register playing and why?**

    I currently play Yamaha trumpets, specifically the 8310Z Bobby Shew model. My main lead mouthpiece for the past ten years has been a modified Yamaha Bpbby Shew lead mouthpiece.The modifications were done at the Yamaha Ginza shop by Hidechi Aoyagi. They include deepening the cup slightly, opening the throat, and taking weight off the mass (skeleton-izing). As I prefer narrower mouthpieces, I've also been using a recently acquired Bach Mt. Vernon 10 ½ C, and the latest versions of Joe Shepley's patented 4D mouthpieces, in brass and Delryn®.

    b. What is the effect of the proper equipment on upper register?

    Efficiency, consistency, easier to 'slot' the notes, did I say efficiency?

    c. How does a player go about finding optimal equipment?

    It's best to find a place that has several different models to choose from. One should take their time, and play the same scales, arpeggios, licks, etc. on each set-up , making sure to rest sufficiently between mpc/horn combinations. It's a good idea to have someone else along (a teacher) to help with comparisons. Ideally, once a desirable combination is achieved, time should be spent with the setup in a real world environment for a week or two.

2. **Psychological versus Physiological Implications:**

    a. In your opinion, approximately what percentage of high note playing is mental vs. physical?

    50/50

    b. Is upper register playing a learned trait or is it based on natural ability?

    50/50

3. **Breathing and Compression:**

    a. **What is your philosophy on breathing concerning the upper register?**

    The 'Wedge' breath as taught by Bobby Shew and practiced by myself, Roger Ingram, Greg Gisbert, Wayne Bergeron, etc., is a very important concept to understand as related to air speed (velocity) and compression. The three-part breath, Pranyama, The Science of Breath, and other reading material can help with deeping one's awareness of proper breathing.

    b. **How does air compression effect upper register playing and should a player be able to execute upper register playing both with and without compressed air?**

    I don't know.

4. **Practice Regimen:**

    a. **How and what do you practice to be able to play consistently in the upper register?**

    I have many practice exercises to work on the upper register including short bursts, rips, arpeggios, etc., however, I believe that the muscles of the face need to be strong yet supple, and in complete balance, so I practice a lot of SOFT, breath-attacked long-tones in all registers of the horn (with much resting, light flapping of lips, and facial massage and stretching in between notes). I think the most important thing is developing enough facial strength to withstand the amount of VELOCITY necessary for upper-register playing without experiencing a 'blow-out'. Practicing long-tones pianissimo in the extreme upper-register is also a great way to introduce chops to the 'slots' without undue stress to the lips. I recommend the *Walter White Long-tone Accompaniment* as an enhancement to long-tone practice.

5. **Additional Comments:**

    a. **Please provide any additional comments you feel would be helpful in advancing the knowledge of upper register playing?**

    Always strive to play musically, but also realize that some exercises are meant to be purely physical. Facial yoga poses, like the Lion pose, which alternately contract and expand the facial muscles, can be beneficial to overall relaxation and suppleness of the trumpet chops. Listening to recording of great lead players of the past and present is inspiring and educational. Take your time, straight ahead, and strive for tone.

ROB PARTON – INTERVIEW
Via E-mail – February 2nd, 2011

1. Identifying Optimal Equipment

For me optimal equipment is based solely on the performer. Certain sizes of mouthpieces work for some and not others. Just like professional basketball players who have huge feet. A student wanting to play basketball like Shaquille O'Neal doesn't mean that if he buys the same exact shoe size that it will work for him. As far as equipment, I believe in the right tool for the right job. A Benge trumpet has a commercial brightness about it that will not lend it to today's orchestral trumpet player although it did thirty years ago in some orchestras. However it will work nicely in the jazz orchestra and allow the player to not have to work as hard to be heard. The same goes for mouthpieces. You would not play a Bach 1 ½ C in the Jazz band as you will work extremely hard to get "that sound." So it is important today as a professor or trumpet to know what is out there as far as instruments for certain jobs. These days there are many very good trumpets available for specific purposes.

a. What equipment do you use for upper register playing and why?

I use a custom made Yamaha trumpet built by Wayne Tanabe that is lighter than the Artist Model NY but set up like that one with a mix of the Eric Miyashiro trumpet. I also play a 1946 Chicago Benge for things that demand louder and more extreme register playing.

b. What is the effect of the proper equipment on upper register?

The proper equipment allows me to make it through the night without hurting myself and hopefully allowing me to play well for the next seven shows or whatever it is that I am doing. It is very important to use the right tool for the right job.

c. How does a player go about finding optimal equipment?

Getting to know the manufacturers through networking with other trumpet players and learning about what they all have to offer. These days many different companies and small one-person shops are building very good trumpets and customizing to the players needs.

2. **Psychological versus Physiological Implications:**

    a. **In your opinion, approximately what percentage of high note playing is mental vs. physical?**

    I think it is about 50/50. If you are lacking the confidence to make that last high F in the tune, you will likely stress out and create tension in the upper body which does not allow for a relaxed breath and relaxed upper body. High notes can be difficult if you are not confident and do not play in that range daily. The same goes for jazz playing. While playing jazz you want to be thinking about the music and nothing else.

    b. **Is upper register playing a learned trait or is it based on natural ability?**

    I believe it is a learned trait but often inspiration is needed to get a student to work towards that type of playing. When Maynard was touring a lot in the 80's, many great lead trumpet players were born simply due to them wanting to do what he was doing. Just pushing through that first high G and then getting help from a clinic they might have seen Maynard's trumpet players do.

3. **Breathing and Compression:**

    a. **What is your philosophy on breathing concerning the upper register?**

    I believe in filling up just as if you are going to yawn. Once full (keeping into account that you never hold the breath) then pushing it out from the diaphragm staying firm and supported. Bobby Shew talks about the Yoga breath and that works for me when I think about it more. I think it is natural with me, or not! It is not a good idea to push against your belt as problems can occur from the type of support.

    b. **How does air compression effect upper register playing and should a player be able to execute upper register playing both with and without compressed air?**

    The air has to be compressed but not forced through the trumpet. The right amount of compression is needed for the right range you are planning to use. It is often a good practice to play scales without using the tongue to start the notes. Start at C in the staff and play a scale with all breath attacks very softly up to high and further. This way you are not getting used to building compression with your tongue.

4. **Practice Regimen:**

    a. **How and what do you practice to be able to play consistently in the upper register?**

    I try to do a routine everyday that is mostly the same, at least the core of it is, and gives me mostly a way to collect data on my sound, chops and help to get to a starting place for practice or gigs. I try to do certain range exercises everyday, tonguing, flexibility and anything that affects my upper range in addition to all of the other things I do to make a living while playing trumpet. I make an effort to practice playing various changes in jazz to keep my mind sharp as far as Jazz playing goes. The daily practice I do changes depending on the job I am required to do.

5. **Additional Comments:**

    a. **Please provide any additional comments you feel would be helpful in advancing the knowledge of upper register playing?**

    Daily practice to the top of your range is required to be consistent. If you don't practice it, how do you expect to do it on the gig? Practice, practice, practice!

APPENDIX D

QUESTIONNAIRE BIOS

ROGER INGRAM – www.rogeringram.com

- Roger Ingram is currently "Artist in Residence" at Roosevelt University, is the author of a book entitled *Clinical Notes on Playing Trumpet*, and is a clinician nationally and internationally. Roger has played lead trumpet in such ensembles as: Woody Herman Orchestra, Harry Connick Jr., and Paul Anka.

JASON CARDER – www.jasoncarder.com

- Jason Carder is currently the Visiting Professor of Jazz Trumpet at the University of Miami and is also the trumpet soloist for the artist Yanni. Jason has played trumpet in notables groups like: Maynard Ferguson Band, Maria Schneider Orchestra, and the Jaco Pastorious Big Band.

BRIAN MACDONALD – www.musicalmacdonalds.com

- Brian Macdonald is currently the lead trumpet player for the Airmen of Note, one of the premier Jazz ensembles in the U.S. Military. Brian also played Lead Trumpet with KC & The Sunshine Band and the Maynard Ferguson Big Bop Nouveau Band.

JON FADDIS – www.jonfaddis.com

- Jon Faddis is currently a full-time faculty member at the Conservatory of Music, Purchase College-SUNY where he is Artist-in-Residence, Professor & Director of Jazz Performance and as a guest lecturer at Columbia College Chicago. Jon has played lead trumpet for Thad Jones/Mel Lewis Orchestra and has also directed bands such as United Nations Orchestra, the Dizzy Gillespie Alumni All-Stars, and the Carnegie Hall Jazz Band of New York.

GABRIELE CASSONE – www.gabrielecassone.it

- Gabriele Cassone is world renowned not only as a artist performing on historically original instruments (Baroque natural trumpet, Classical keyed trumpet, rotary valve trumpet and piston cornet), but is also an renown contemporary musician. Gabriele is a professor at the Conservatory of Novara in Italy, and holds regular international masterclasses as guest professor at the Academy of S. Cecilia in Rome.

BOBBY SHEW – www.bobbyshew.com

- Bobby devotes a considerable amount of time actively involved in the educational system, conducting clinics and master classes at high schools and college campuses all over the world. Bobby has also performed in numerous big bands such as Bill Holman, Louie Bellson, Toshiko Akiyoshi-Lew Tabackin, Oliver Nelson, Bill Berry, Nat Pierce-Frank Capp Juggernaut, Ed Shaughnessy, Terry Gibbs, Benny Goodman, Maynard Ferguson, Neal Hefti, Don Menza, and Bob Florence.

CHAD SHOOPMAN – www.myspace.com/shoopmaestro

- Chad Shoopman is an artist for Powell Signature Trumpets and Warburton Mouthpieces where he designed the "Shoop" lead mouthpiece. Chad plays regularly as lead trumpet for the Walt Disney World Co. and is also the lead trumpet player for The Chuck Owen Jazz Surge Big Band, affording him the opportunity to work with artists such as Gordon Goodwin, Bob Brookmeyer, Bob Mintzer, Randy Brecker, and Chick Corea.

ERIC MIYASHIRO – www.ericmiyashiro.com/international.html

- Eric Miyashiro has played as a lead trumpet player in famous bands such as Buddy Rich Band, Woody Herman Band, Maynard Ferguson Band, Count Basie Band, Thad Jones & Mel Lewis, and Frank Sinatra. Eric currently lives in Japan, and works as a studio musician, teacher at clinics, player on a TV show, or hold his own stage at live houses.

GREG GISBERT – www.myspace.com/greggisbert

- Greg Gisbert currently plays trumpet in the Maria Schneider Orchestra, Roy Hargrove Big Band, and the Dizzy Gillespie Alumni Band. Greg has also played with Buddy Rich, Maynard Ferguson, and Toshiko Akiyoshi.

FRIEDEMANN IMMER – http://trompeten-consort.de

- Friedemann Immer is one of the leading authorities on trumpet playing from the Baroque genre. Friedemann tours internationally as a Baroque artist and is a professor of trumpet at the Hochschule für Musik Cologne for baroque trumpet at the Conservatorium van Amsterdam in the Netherlands. In addition, Friedemann gives regular classes and workshops at various universities around the world.

NATHANIEL MAYFIELD – www.natemayfield.com

- Nathaniel Mayfield plays modern and baroque trumpet for audiences and also gives masterclasses around the world. Nathaniel has premiered numerous solo and chamber works for trumpet from contemporary composers such as Eric Ewazen (The Juilliard School), Filip Sande (Norway), and Eric McIntyre (Grinnell College).

PAUL STEPHENS – www.pshorn.com

- Paul Stephens is currently playing lead trumpet for the U.S. Army's Jazz Ambassadors. Paul has played with: Maynard Ferguson, Nicholas Payton, Herbie Hancock and has performed on three Grammy nominated CD's.

RASHAWN ROSS – www.davematthewsband.com/band/rashawn-ross

- Rashawn Ross currently tours with Dave Mathews Band and is on faculty at Florida International University. Rashawn has also worked with artists such as Usher, Ludacris, Roy Hargrove, Nicholas Payton and Chaka Khan.

TAGE LARSEN – http://music.depaul.edu/FacultyAndStaff/L/tlarsen.asp

- Tage Larsen currently plays 4th/utility trumpet in the Chicago Symphony Orchestra and is on the trumpet faculty of the DePaul University School of Music. Tage formally played with St. Louis Symphony Orchestra, Annapolis Symphony Orchestra, and the President's Own U.S. Marine Band.

TONY KADLECK – www.kadleck.com

- Tony Kadleck is currently a member of a number of groups including the Maria Schneider Jazz Orchestra, the New York Pops, John Fedchock's NY Big Band, the Westchester Jazz Orchestra, and John Pizzarelli's "Swing Seven". Tony has also played with many artists including Frank Sinatra, Barbra Streisand, and Stevie Wonder. In the studio, his has recorded for Celine Dion, Michael Jackson, Luther Vandross and countless others.

ANTHONY PLOG – www.anthonyplog.com

- Anthony Plog won his first orchestral position was Principal Trumpet with the San Antonio Symphony followed by the Utah Symphony. Anthony moved to Europe in 1993 to play solo trumpet with the Malmo Symphony in Sweden, and since 1993 has been a Professor at the Staatliche Hochschule fur Musik in Freiburg, Germany.

WAYNE BERGERON – www.waynebergeron.com

- Wayne Bergeron currently has a career as one of the most active players in the world with studio dates, International touring, jazz concerts, guest soloist appearances, and clinics. Wayne has worked on 300 plus TV & motion picture soundtracks and also plays with Gordon Goodwin's Big PHAT Band.

WALTER WHITE – www.walterwhite.com

- Walter White currently serves as lead trumpeter for Dave Matthew's Manhattan Jazz Orchestra, with whom he tours Japan on a bi-yearly basis, and has recorded six award-winning records for the Japanese market. Walter can also be heard on records, movies, and television; most notably network sitcoms TAXI, and The Cosby Show.

ROB PARTON – www.robparton.com

- Rob Parton is currently the Associate Professor of Trumpet at Capital University in Columbus Ohio. Rob has also performed with the Chicago Symphony, Milwaukee Symphony, Chicagoland Pops Orchestra, Doc Severinson, Tony Bennett, Frank Sinatra Jr., Mel Torme, Beach Boys, Christopher Cross, Sheena Easton, Peabo Bryson, Celine Dion, Nick Carter, Yolanda Adams, Josh Groban, Enrique Eglasius, Natalie Cole and Maynard Ferguson.

VITA

Augie Haas, a Milwaukee native, began playing trumpet at age 10 and has been performing, composing, and teaching ever since. He began touring the nation at age 15 with the musical ambassadors of Wisconsin, KIDS from Wisconsin. After his 3 year tour with KIDS, Haas decided a professional trumpet career was his passion so he accepted a scholarship to Roosevelt University's Chicago College of the Performing Arts and received a Bachelor of Music in Jazz Studies. After graduating from Roosevelt, Haas accepted another scholarship and graduate assistantship to The University of Miami's Frost School of Music Conservatory for a Masters in Studio Music and Jazz as well as a Doctorate in Musical Arts. Haas plays lead trumpet for numerous bands on campus, most notably Miami's Concert Jazz Band, an 18 piece big band that won best college big band in 2007 & 2010 according to *Downbeat* magazine.

While in Miami, Haas began performing/recording for a wide range of professional artists/producers, most recently including: Disney, The Temptations, Rihanna, Pitbull, Iggy Pop, Jet, The O'jays, The Four Tops, Bernadette Peters, Joel Gray, Steve Miller, Roy Hargrove, Arturo Sandoval, Peter Nero and the Philly Pops Orchestra, Bruce Hornsby, the Milwaukee Pops Orchestra, Dave Liebman's Big Band, John Secada, Slide Hampton, Toshiko Akiyoshi, John Fedchock, Randy Brecker and Frank Tiberi.
In 2009 Haas began touring with Maria Schneider, Paul Anka and also began national TV credits including The Tonight Show, The Ellen Show, 2009 Alma Awards and the Tom Green Show. Haas has also made numerous "guest" appearances such as performing a Solo National Anthem for the Green Bay Packers and Milwaukee Brewers.

Since moving to Miami, Haas is known as a well composer combining jazz with elements of pop. In order to begin writing new music, Haas founded his own band, the South Nine Ensemble. South Nine Ensemble has released two albums, "The Llama" and "Doing it Augie Style," both including original works written, arranged, and composed by Mr. Haas. In hopes to have jazz inspire a younger audience, Hass also co-founded Playtime Music, LLC. As artistic director, Haas released the album "Baby Jazz." Currently, Haas is composing an album featuring him with strings of all original work to be released in 2011.

www.augiehaas.com